02-8906-10-PA
REV. NO. 0

FINAL DRAFT
PRELIMINARY ASSESSMENT
OAKITE PRODUCTS, INC.
METUCHEN, NEW JERSEY

PREPARED UNDER

TECHNICAL DIRECTIVE DOCUMENT NO. 02-8906-10
CONTRACT NO. 68-01-7346

FOR THE

ENVIRONMENTAL SERVICES DIVISION
U.S. ENVIRONMENTAL PROTECTION AGENCY

SEPTEMBER 1, 1989

NUS CORPORATION
SUPERFUND DIVISION

SUBMITTED BY:

Anthony F. Culmone Jr.
ANTHONY F. CULMONE JR.
PROJECT MANAGER

Richard P. Hubner
RICHARD P. HUBNER
SITE MANAGER

REVIEWED/APPROVED BY:

B T Hrnciar AFITOM for
RONALD M. NAMAN
FIT OFFICE MANAGER

252085

POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT

PART I: SITE INFORMATION

1. **Site Name/Alias** Oakite Products, Inc.

   Street 700 Middlesex Avenue

   City Metuchen **State** New Jersey **Zip** 08840

2. **County** Middlesex **County Code** 023 **Cong. Dist.** 6

3 **EPA ID No.** NJD002458776

4. **Latitude** 40° 32' 25" N **Longitude** 74° 22' 10" W

   USGS Quad. Perth Amboy

5. **Owner** Oakite Products, Inc. **Tel. No.** (201) 464-6900

   Street 50 Valley Road

   City Berkley Heights **State** NJ **Zip** 07922

6. **Operator** Oakite Products, Inc. **Tel. No.** (201) 464-6900

   Street 50 Valley Road

   City Berkely Heights **State** New Jersey **Zip** 07922

7. **Type of Ownership**

   ☒ Private ☐ Federal ☐ State
   ☐ County ☐ Municipal ☐ Unknown ☐ Other _____

8. **Owner/Operator Notification on File**

   ☒ RCRA 3001 **Date** 8/18/80 ☐ CERCLA 103c **Date** _____
   ☐ None ☐ Unknown

9. **Permit Information**

Permit	Permit No.	Date Issued	Expiration Date	Comments
NJPDES	0063347	Jan. 19, 1987	Feb. 28, 1990	

10. **Site Status**

    ☒ Active ☐ Inactive ☐ Unknown

11. **Years of Operation** January 1, 1961 to Present

12. **Identify the types of waste units (e.g., landfill, surface impoundment, piles, stained soil, above- or below-ground tanks or containers, land treatment, etc.) on site. Initiate as many waste unit numbers as needed to identify all waste sources on site.**

(a) Waste Management Areas

Waste Unit No.	Waste Unit Type	Facility Name for Unit
1	Landfill	Oakite Landfill
2	Tank	Treatment Tank
3	Tanks	Above Ground Storage Tanks
4	Containers	Drum Storage Area
5	Tanks	Chromium Waste Tanks

(b) Other Areas of Concern

Identify any miscellaneous spills, dumping, etc. on site; describe the materials and identify their locations on site.

On February 14, 1980 approximately 30,000 lbs of a mixture of sodium carbonate and sodium bicarbonate was spilled on the roadway next to the facility. The spill was the result of a truck pulling away from the loading dock before it was empty. The majority of the spill was cleaned up by Oakite. The material is non-toxic (Ref. No. 1). Additionally, a spill containing 600 lbs of sodium chloride and 100 lbs of sodium hypochlorite occurred on May 24, 1983. This spill caused a mechanical malfunction of a conveyor belt. Heat generated by friction caused a discharge of fumes. Chemical wastes were disposed through discharge of the wastes into the sanitary sewer system.

13. **Information available from**

Contact Amy Brochu **Agency** U.S. EPA **Tel. No.** (201) 906-6802

Preparer Richard P. Hubner **Agency** NUS Corp. Region 2 FIT **Date** 9/1/89

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following six items.

Waste Unit 1 - Landfill, Oakite Landfill

1. **Identify the RCRA status and permit history, if applicable, and the age of the waste unit.**

   Oakite Products, Inc. has been at the Middlesex Ave., Metuchen site since January 1, 1961. They are the current owner of a landfill that exist on their property. The landfill was operated prior to Oakite's aquiring of the property, as a sanitary landfill which accepted non-chemical industrial wastes. The age of the landfill is unknown. On January 19, 1978 Oakite Products, Inc. was issued a NJPDES permit for discharge to groundwater for the landfill. The permit is number NJ0063347.

2. **Describe the location of the waste unit and identify clearly on the site map.**

   The landfill is located on that portion of the site which is adjacent to Hampton Street and Durham Avenue.

3. **Identify the size or quantity of the waste unit (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The landfill covers approximately 4 acres. The quantity of hazardous substance within the landfill is unknown.

4. **Identify the physical state(s) of the waste type(s) as disposed of in the waste unit. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid, or gas.**

   The landfill was operated as a sanitary landfill which accepted non-chemical industrial wastes. The exact nature of the substances disposed of in the landfill is unknown, however, it is assumed that a large variety of materials ranging from solids to liquids were disposed of in the landfill.

5. **Identify specific hazardous substance(s) known or suspected to be present in the waste unit.**

   In accordance with the requirements of the NJPDES permit issued to Oakite Products, Inc., the company installed four monitoring wells to monitor the discharge to groundwater from the landfill. The wells were sampled four times in 1988 and subsequent analysis showed that primary and secondary groundwater standards were exceeded for the following analytes: volatile organics, cadmium, manganese, and nitrate.

6. **Describe the containment of the waste unit as it relates to contaminant migration via groundwater, surface water, and air.**

   There is no known containment for contaminant migration via groundwater, surface water, or air at the landfill and there is no record of any remedial action taken at the site.

Ref. Nos. 2, 3, 4, 5

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following six items.

Waste Unit 2 - Tank, Treatment Tank

1. **Identify the RCRA status and permit history, if applicable, and the age of the waste unit.**

   On November 13, 1980 Oakite Products, Inc. submitted an application for an interim status permit with the U.S. EPA for their 700 Middlesex Avenue facility. In a letter dated November 9, 1981 the company notified the EPA that it wished to withdraw its application based on an exemption published in the Federal Register on November 17, 1980. This exemption was for facilities that treat or neutralize hazardous wastes only because the wastes exhibit corrosivity. The age of this waste unit is unknown; however, Oakite Products, Inc. has occupied the building since January 1, 1961.

2. **Describe the location of the waste unit and identify clearly on the site map.**

   The treatment tank is located in the basement of the main plant building.

3. **Identify the size or quantity of the waste unit (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The treatment tank has a capacity of 1000 gallons. The exact quantity of wastes which is stored in the tank is difficult to estimate. Wastewater from plant operations is fed into the treatment tank where it is neutralized and discharged to the municipal sewer system. A flow rate of 217 gallons per minute through the tank was observed during a January 27, 1988 inspection of the facility by New Jersey Department of Environmental Protection (NJDEP) personnel. Also noted during the inspection were two new large fiberglass tanks which were being installed. The company planned to use these tanks for the pretreatment of their wastewater.

4. **Identify the physical state(s) of the waste type(s) as disposed of in the waste unit. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid, or gas.**

   The physical state of the wastes disposed in the treatment tank are liquids and solids.

5. **Identify specific hazardous substance(s) known or suspected to be present in the waste unit.**

   Wastewater is generated when the kettles and equipment used to prepare the companies finished products are cleaned out between batches. The waste water is alkaline and the company classifies it as a corrosive waste. The waste water is fed into the treatment tank where it is reportedly neutralized and discharged into the municipal sewer system. Other wastes are suspected to be present in the waste water. Since the waste water is generated from the cleaning of kettles and equipment used to produce the companies finished products, it must come into contact with at least residual amounts of these products. The company reported that it uses the following raw materials to formulate its products: creysilic acid, ortho dichlorobenzene, formic acid, hydrofluoric acid, and 1,1,1-trichloroethane. Some or all of these chemicals may be present in the waste water. Futhermore, it is unknown if the above list is complete or the company uses other materials to formulate its products.

6. **Describe the containment of the waste unit as it relates to contaminant migration via groundwater, surface water, and air.**

The wastewater treatment tank is located in the basement of the facility. The tank discharges into the city sewer system.

Ref. Nos. 7 through 13

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following six items.

Waste Unit 3 - Tanks Above Ground Storage Tanks

1. **Identify the RCRA status and permit history, if applicable, and the age of the waste unit.**

   The RCRA status, permit history, and age of the waste unit is described under Question No. 1, Waste Unit No. 2.

2. **Describe the location of the waste unit and identify clearly on the site map.**

   The tanks are located along the southwest side of the building.

3. **Identify the size or quantity of the waste unit (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The exact number and size of the tanks located at the facility is unknown. At least 6 tanks are visible in a photograph taken by NUS Corp. Region 2 FIT personnel during an off site reconnaissance on July 19, 1989. The tank used to store nitric acid has a capacity of 4300 gallons.

4. **Identify the physical state(s) of the waste type(s) as disposed of in the waste unit. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid, or gas.**

   Liquids are known to be stored in the tanks.

5. **Identify specific hazardous substance(s) known or suspected to be present in the waste unit.**

   The company uses the tanks to store raw materials in bulk. The company reported to the U.S. Environmental Protection Agency (USEPA) that is uses the following raw materials: 1, 2-dichlorobenzene, cresylic acid, formic acid, hydrofluoric acid, and 1,1,1-trichloroethane. Some or all of these chemicals may have been stored in the tank area. In addition, spills of triethanol amine, methylene chloride, fatty acid, petroleum distillate, sodium silicate, glycol, pine oil, and petroleum (Metrosol 400) may be stored in the tanks.

6. **Describe the containment of the waste unit as it relates to contaminant migration via groundwater, surface water, and air.**

   There have been numerous spills in the area of the tanks. On June 15, 1983 a RCRA inspector noted that a tank valve was leaking outside of the diked area by the tank farm.

   On August 13, 1985 at approximately 0950 hours there was a spill of 200 gallons of 70% nitric acid as a result of overfilling the storage tank. As a result of the spill, yellowish fumes were emitted which formed a cloud approximately 0.25 mile in a radius. The facility was evacated and area residents were asked to leave their homes. Two people down wind of the fumes suffered respiratory problems and were hospitalized for observation. The evacuation was not lifted until 1400 hours of the same day. Most of the 200 gallons of the spilled nitric acid was contained in a diked area. The spilled acid was neutralized with sodium carbonate. Forty drums of spill debris was collected. Of this, thirty drums were treated with phosphoric acid to adjust the pH and disposed of into the city sewer system, and the rest were to be manifested out as hazardous waste.

   An inspection on October 28, 1988 conducted to confirm reports of spills at the site turned up nine areas where spills had occurred in the outside tank area. (For a specific description of the wastes involved and the location of the spills, see Reference No. 15).

   Ref. Nos. 2, 11, 12, 14, 15

5. **Identify specific hazardous substance(s) known or suspected to be present in the waste unit.**

The wastes stored in the containers come from several sources. Customer returns, off-spec products,and discontinued products account for some of the wastes. Wastes generated during the manufacturing process are another source. The following general descriptions have been used to characterize the company's hazardous wastes: corrosive wastes, ignitable wastes, halogenated solvents, solvent, and stripper 257. The following specific chemicals are known to have been stored in drums: hydrofluoric acid, methylene chloride, chromic acid, and phosphoric acid.

6. **Describe the containment of the waste unit as it relates to contaminant migration via groundwater, surface water, and air.**

Oakite Products, Inc. has established a record of sloppy housekeeping regarding the drum storage of hazardous materials at the site. Several RCRA inspectors have noted drums which were in poor condition and were improperly labeled in various locations throughout the building. On September 9, 1983 drums of hydrofluoric acid located outdoors were observed to be leaking. On October 23, 1988 two unsecured drums containing unknown contents were noted outdoors. One of the drums was surrounded by an area of darkly discolored soil and the other drum was 1/2 filled with a dark oily sludge. Therefore, there is evidence that wastes stored in the containers have not been contained properly.

Ref. Nos. 8, 11, 12, 15

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following six items.

Waste Unit 4 - Containers Drum Storage Area

1. **Identify the RCRA status and permit history, if applicable, and the age of the waste unit.**

   The RCRA status, permit history, and age of the waste unit is described under Question No. 1, Waste Unit No. 2.

2. **Describe the location of the waste unit and identify clearly on the site map.**

   Drums have been noted during several inspections at many places throughout the building and also outdoors. Drums were observed in the fenced area along Middlesex Avenue during an off-site reconnaissance conducted by NUS Corp. Region 2 FIT personnel on July 19, 1989.

3. **Identify the size or quantity of the waste unit (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums or tanks). Specify the quantity of hazardous substances in the waste unit.**

   The following is a summary of the quantities of wastes documented to have been present at the site:

   June 15, 1983 - Twelve drums of stripper 257, described as having very poor integrity, were in the loading dock area. Approximately 20 more drums were in same area whose contents were unknown.

   September 9, 1983 - An unknown number of drums containing hydrofluoric acid, described as being highly deteriorated with evidence of leakage, were located outdoors. Unmarked drums were located haphazardly throughout the building. Six drums containing solvent were present, as well as 22 drums containing corrosive hazardous waste which were on site for over 90 days. The corrosive waste drums and solvent drums had loose rings and showed signs of corrosion. Also, there were 4 fiber drums which contained lab packs composed of waste liquids, chlorinated waste, oily waste, chromate and non-chromate waste.

   January 27, 1988 - Ten drums containing methylene chloride were present, as well as 25 thirty gallon drums containing methylene chloride and 20 drums containing a chromic acid and phosphoric acid mixture. In addition, there were 55 containers containing waste off-spec products which had no accumulation start dates.

   October 28, 1988 - One drum containing chromic acid waste was present, as well as 2 unsecured drums of unknown contents located outdoors.

   It is estimated that the company makes three to four shipments of waste off site each year consisting of approximately 40 drums per shipment.

4. **Identify the physical state(s) of the waste type(s) as disposed of in the waste unit. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid, or gas.**

   The physical state of the wastes disposed of in the containers is liquid.

PART II: WASTE SOURCE INFORMATION

For each of the waste units identified in Part I, complete the following six items.

Waste Unit 5 - Tanks, Chromium Waste Tanks

1. **Identify the RCRA status and permit history, if applicable, and the age of the waste unit.**

   The RCRA status and permit history of the facility are described under Question No. 1, Waste Unit No. 2. The age of the waste unit is unknown; however, Oakite Products, Inc. has occupied the facility since January 1, 1961. The company reports that the tanks have not been used since 1973. All associated pipes and pumps have been disconnected from the tanks.

2. **Describe the location of the waste unit and identify clearly on the site map.**

   The chromium waste tanks are located in the basement of the facility.

3. **Identify the size or quantity of the waste unit (e.g., area or volume of a landfill or surface impoundment, number and capacity of drums or tanks). Specify the quantity of hazardous substances in the waste unit.**

   There are two tanks, each of which has a capacity of 1000 gallons. The tanks have been cleaned and are presently unused and empty.

4. **Identify the physical state(s) of the waste type(s) as disposed of in the waste unit. The physical state(s) should be categorized as follows: solid, powder or fines, sludge, slurry, liquid, or gas.**

   The physical state of the waste when the tanks were in use was liquid.

5. **Identify specific hazardous substance(s) known or suspected to be present in the waste unit.**

   The tanks were used to store chromate waste.

6. **Describe the containment of the waste unit as it relates to contaminant migration via groundwater, surface water, and air.**

   The tanks are located inside the facility in the basement. Since the tanks are no longer in use and have been emptied and flushed, there is no danger of contamination from the tanks. The company reports that it currently reuses some of its chromate waste and it also stores it in drums for shipment off site.

Ref. Nos. 2, 8, 12, 15

PART III: HAZARD ASSESSMENT

GROUNDWATER ROUTE

1. **Describe the likelihood of a release of contaminant(s) to the groundwater as follows: observed, alleged, potential, or none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminant(s) to the facility.**

There is a high potential for the release of contaminants to groundwater. On-site inspections have reported evidence of chemical spills on the site property. Specific chemicals which are reported to have been spilled are triethanol amine, methylene chloride, fatty acid, nitric acid, petroleum distillate, sodium silicate, glycol, pine oil, and petroleum (Metrosol 400). In addition, there is a landfill on the site. Monitoring wells installed at the landfill indicate that volatile organics, cadmium, manganese, and nitrate were being released to groundwater in excess of primary and secondary drinking water standards during 1988. The site property and landfill are in direct contact with underlying soils, and there is no record of any containment associated with these waste units.

Ref. Nos. 3, 4, 11, 15

2. **Describe the aquifer of concern; include information such as depth, thickness, geologic composition, permeability, overlying strata, confining layers, interconnections, discontinuities, depth to water table, groundwater flow direction.**

The geology within three miles of the site consists of two major geologic units of Triassic and Cretaceous age which are overlain in some places by Quaternary surficial deposits. The two major formations are the Passaic Formation, formerly known as the Brunswick Formation, located to the north and the Raritan Formation to the south. The two major formations meet at the surface along the fall line, which runs in a roughly straight line in a southwest to northeast direction approximately 0.75 of a mile to the south of the site.

The Passaic Formation, which is lcoated to the north of the fall line, is a major aquifer in Middlesex County. It consists of red shale interbedded with siltstone and occassional layers of sandstone. The permeability of the shale is poor; however, the formation has many intersecting cracks which provide a mechanism for water to be stored within and flow through the formation. The intersecting cracks mean that water can flow in almost any direction; therefore, it is difficult to determine the direction of ground water flow in the aquifer. The Passaic Formation is overlain in some areas by a red clay layer. Well logs from wells located approximately 0.5 mile to the south of the site, show that the formation is covered by approximatley twenty feet of red clay and the shale starts at a depth of approximately 20 feet. However, this red clay is not present on top of the Passaic Formation in two wells located approximately one mile to the south west of the site.

The second major geologic unit is the Raritan Formation located to the south of the fall line. The Raritan Formation is part of the unconsolidated Atlantic Coastal Plain deposits which dip down to the southeast. The Raritan Formation consists of seven distinct alternating layers of clay and sand. Three of the layers are water bearing. In the region of the site it is difficult to distinguish between the different layers, so it is referred to in this region as the Raritan Formation-undivided. The Raritan Formation outcrops directly to the south of the fall line. The outcrop region of the Farrington Sand, which is one of the members of the Raritan Formation, has been delineated within 3 miles of the site. That portion of the Farrington Sand which lies to the north of the Raritan River has been isolated from that portion of the Farrington Sand which lies to the south of the river due to erosion by the river. The two separate sections of the Farrington sand appear to be connected in some places by a thin layer of sand, but the extent of the hydraulic connection between the two parts is unknown.

The discussion of the geology up to this point has included only the two major geologic units. Also, present in some areas are Quaternary deposits which overlie the two major units. The Passaic Formation is overlain in regions by stratified drift deposits and the Pennsauken Formation. The stratified drift deposits consist of sand and gravel and are highly permeable, greater than 10^{-3} cm/sec. The Pennsauken Formation consists of clayey sand and gravel and is moderately permeable 10^{-3} to 10^{-5} cm/sec. The importance of these two deposits on top of the Passaic Formation is that they absorb water long enough to transmit it to the Passaic Formation, which by itself is of low permeability, less than 10^{-7} cm/sec. Portions of the Raritan Formation to the south of the fall line are overlain by stratified drift and Pennsauken Formation, as well as the Cape May Formation. The Cape May Formation consists of fine to medium grained quartz sand and some fine gravel and is highly permeable. The Farrigton Sand also outcrops in this region.

Well logs in the region of the site indicate that the water table lies between 40 and 55 feet below ground surface.

Ref. Nos. 16, 17, 18, 19

3. **Is a designated sole source aquifer within 3 miles of the site?**

The aquifer underlying the site within three miles is not a designated sole soure aquifer.

Ref. No. 20

4. **What is the depth from the lowest point of waste disposal/storage to the highest seasonal level of the saturated zone of the aquifer of concern?**

The well log from a test well drilled approximately one mile to the southwest indicates that the depth to the water table in the Passaic Formation is between 40 and 55 feet below ground surface.

Ref. No. 16

5. **What is the permeability value of the least permeable continuous intervening stratum between the ground surface and the aquifer of concern?**

There is no continuous intervening stratum between the Passaic Formation within three miles of the site. The least permeable stratum are Quaternary deposits overlaying the Passaic Formation. These deposits consist of clay, sand, and gravel and have an estimated permeability of 10^{-3} - 10^{-5} cm/sec.

Ref. No. 16, 17, 18, 21

6. **What is the net precipitation for the area?**

The normal annual total precipitation in the region of the site is approximatley 44 inches. The mean annual lake evaporation in the same area is approximately 32 inches. Therefore, the net precipitation for the area is approximatley 12 inches.

Ref. No. 21

7. **Identify uses of groundwater within 3 miles of the site (i.e., private drinking source, municipal source, commercial, industrial, irrigation, unusable).**

Three water companies serve the area within three miles of the site. They are Middlesex Water Company, Edison Twp. Water Department, and Perth Amboy Water Department. Edison Township Water Department currently purchases all of their water from Elizabethtown Water Company and Middlesex Water Company. Elizabethtown Water Company gets its water supplies from sources outside of the 3-mile radius. Edison Township Water Department does own several public supply wells that are not located within 3 miles of the site; however, these are used only in the event of an emergency,. Perth Amboy Water Department gets its water from wells located in the Runyon Watershed which is located in Old Bridge Township. Middlesex Water Company gets their water from several well fields located within their service area and one surface water intake located along the Delaware and Raritan Canal in New Brunswick. None of these well fields are within 3 miles of the site.

Groundwater is tapped for use within 3 miles of the site. According to NJ Department of Environmental Protection well records the following wells are located within three miles of the site: 38 domestic wells, 7 irrigation wells, 9 industrial wells, 1 commercial well, 1 well for office use, 2 semi-public wells, 1 air conditioner well, 1 injection well, and 1 well used for toilets and showers. Residents using private domestic wells have access to public supply water. The number of domestic wells that are currently in use is unknown.

Ref. Nos. 16, 22 through 27, 34

8. **What is the distance to and depth of the nearest well that is currently used for drinking or irrigation purposes?**

Distance 0.6 Mile **Depth** 147 Feet

Ref. No. 6

9. **Identify the population served by the aquifer of concern within a 3-mile radius of the site.**

The three public water companies serving the area within three miles of the site do not get any of their water from wells located within three miles of the site. (See question No. 7 for a complete description of public water supply in the vicinity of the site.) Thirty-eight domestic wells have been located within three miles of the site. Assuming that each domestic well serves 3.8 people, there are approximately 144 people served from groundwater within three miles of the site.

Ref. Nos. 16, 22 through 27, 34

SURFACE WATER ROUTE

10. **Describe the likelihood of a release of contaminant(s) to surface water as follows: observed, alleged, potential, or none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminants to the facility.**

There is a potential for the release of contaminants to surface water. On-site inspections have reported evidence of chemical spills on the site property. Specific chemicals which are reported to have been spilled are triethanol amine, methylene chloride, fatty acid, nitric acid, petroleum distillate, sodium silicate, glycol, pine oil, and petroleum (Metrosol 400). Surface water runoff from precipitation could cause migration of contaminants off site.

In addition, the facility discharges its waste water into the city sewer system. Due to the general description of the facility's operations, it is likely that this discharge contains hazardous waste.

Ref. Nos. 8, 9, 11, 12, 15

11. Identify and locate the nearest downslope surface water. If possible, include a description of possible surface drainage patterns from the site.

The nearest downslope surface water is Bound Brook and the Dismal Swamp. Surface water runoff resulting from precipitation most likely would be diverted by nearby storm drains. These storm drain lines connect with a main line which runs northwest and parallel to the railroad tracks adjacent to the site. After approximately 1.5 miles the main line discharges into the Dismal Swamp, which surrounds Bound Brook. Bound Brook continues northwest 3 miles downstream from the site.

Ref. Nos. 14, 28, 29

12. What is the facility slope in percent? (Facility slope is measured from the highest point of deposited hazardous waste to the most downhill point of the waste area or to where contamination is detected.)

Th site is at an elevation of approximately 100 ft above mean sea level (MSL) in the south corner of the site and 80 ft (MSL) in the north corner of the site. The distance between the two corners is approximately 1400 ft. Therefore, the facility slope is approximately 1.5 percent.

Ref. Nos. 14, 28

13. What is the slope of the intervening terrain in percent? (Intervening terrain slope is measured from the most downhill point of the waste area to the probable point of entry to surface water.)

The slope of the intervening terrain is as follows:

- Waste storage elevation 100 ft
- Point of entry elevation 80 ft
- Migration distance 7900 ft $\frac{100 \text{ ft MSL} - 80 \text{ ft MSL}}{7900 \text{ ft}} \times 100 = 0.25\% \text{ slope}$

Ref. No. 28

14. What is the 1-year 24-hour rainfall?

The 1-year 24-hour rainfall in Middlesex County is approximately 2.75 inches.

Ref. No. 21

15. What is the distance to the nearest downslope surface water? Measure the distance along a course that runoff can be expected to follow.

The distance to the nearest downslope surface water is approximately 7900 feet.

Ref. Nos. 28, 29

16. Identify uses of surface waters within 3 miles downstream of the site (i.e., drinking, irrigation, recreation, commercial, industrial, not used).

The New Jersey State designated uses for Bound Brook: are the maintenance, migration, and propagation of natural and established biota; primary and secondary contact recreation; agricultural and industrial water supply; public water supply after treatment; and any other reasonable uses.

Ref. No. 30

17. **Describe any wetlands, greater than 5 acres in area, within 2 miles downstream of the site. Include whether it is a freshwater or coastal wetland.**

Wetlands covering approximately 720 acres exist within 2 miles downstream of the site. The wetlands are a mixture of palustrine broad-leaved deciduous forested wetlands, palustrine broad-leaved deciduous scrub/shrub wetlands, and palustrine emergent wetland. They are fresh water wetlands.

Ref. No. 31

18. **Describe any critical habitats of federally listed endangered species within 2 miles of the site along the migration path.**

There are no critical habitats of federally listed endangered species within 2 miles of the site.

Ref. Nos. 32, 33

19. **What is the distance to the nearest sensitive environment along or contiguous to the migration path (if any exist within 2 miles)?**

The nearest sensitive environment is palustrine, forested wetlands located approximately 1.5 miles from the site boundary along the probable migration path.

Ref. No. 31

20. **Identify the population served or acres of food crops irrigated by surface water intakes within 3 miles downstream of the site and the distance to the intake(s).**

No public water intakes exist within three miles of the site. No other surface water intakes have been identified within three miles of the site.

Ref. Nos. 23, 24, 25, 26, 27, 28, 34

21. **What is the state water quality classification of the water body of concern?**

The state water quality classification of Bound Brook is FW2-NT.

Ref. No. 30

22. **Describe any apparent biota contamination that is attributable to the site.**

The biota contamination was observed at the site during an off-site reconnaissance conducted by NUS Corp. FIT 2 personnel conducted on July 19, 1989.

Ref. No. 14

AIR ROUTE

23. **Describe the likelihood of a release of contaminant(s) to the air as follows: observed, alleged, potential, none. Identify the contaminant(s) detected or suspected, and provide a rationale for attributing the contaminant(s) to the facility.**

There was an observed release of contaminants to the air at the facility. On August 13, 1985 there was a spill of 200 gallons of nitric acid at the facility. As a result of the spill, a cloud of yellow fumes developed which covered an area approximately 0.25 mile in radius. It was necessary to evacuate area businesses and residents. Two people downwind of the plume were overcome by the fumes and were hospitalized.

Ref. No. 11

24. What is the population within a 4-mile radius of the site?

There are approximately 129,500 people living within 4 miles of the site.

Ref. No. 35

FIRE AND EXPLOSION

25. Describe the potential for a fire or explosion to occur with respect to the hazardous substance(s) known or suspected to be present on site. Identify the hazardous substance(s) and the method of storage or containment associated with each.

There is potential for fire to occur at the site. The facility has had questionable methods with regard to waste(s) stored there. The facility stores combustible liquids at the site for use in their products. The combustible liquids are creysilic acid, petroleum distillate, carbital cellosolve, pine oil, Metrosol 400, and orthodichlorobenzene.

In addition, there was an incident on May 24, 1983 involving chemical fumes. A mechanical failure on a conveyor line caused a mixture of sodium chloride and sodium hypochlorite to overheat and emit fumes.

Ref. Nos. 12, 36, 37, 38, 39, 40

26. What is the population within a 2-mile radius of the hazardous substance(s) at the facility?

There are approximately 40,600 people living within 2 miles of the site.

Ref. No. 35

DIRECT CONTACT/ON-SITE EXPOSURE

27. Describe the potential for direct contact with hazardous substance(s) stored in any of the waste units on site or deposited in on-site soils. Identify the hazardous substance(s) and the accessibility of the waste unit.

There is potential for direct contact with hazardous substances at the site. Inspection reports have indicated poor housekeeping practices by Oakite Products. RCRA inspectors have observed oil spills on the facility's floors, and improperly secured drums and leaking drums throughout the site. In addition, there have been spills in the outdoor tank storage area onto the ground. These spills are a potential threat to on-site workers.

There is little potential for direct contact with the public at the site. The site is currently active, and access to the drum and tank storage area is controlled by a chain link fence in good conditions (See photos).

Ref. Nos. 8, 11, 12, 14, 15

28. How many residents live on a property whose boundaries encompass any part of an area contaminated by the site?

The site is adjacent to residential areas. The exact number of houses adjacent to the site is unknown.

Ref. Nos. 14, 28

29. What is the population within a 1-mile radius of the site?

There are approximatley 13,600 people living within 1 mile of the site.

Ref. No. 35

PART IV: SITE SUMMARY AND RECOMMENDATIONS

Oakite Products, Inc. is located in Metuchen, New Jersey. The company has occupied the Metuchen facility since January 1, 1961. Oakite Products, Inc. shares the facility with Epic Industries, which is a subsidiary of Oakite. The site covers approximately 675,000 sq. ft. The facility formulates industrial cleaners as well as a variety of household cleaners. The site is located in an urban area of Metuchen.

There are several sources of waste at the facility. The company produces its formulations in batches. Between the batches, it is necessary to clean out the facility's kettles and equipment. This results in the generation of waste water. This wastewater is collected on-site in a tank, treated to adjust the pH, and discharged into the city sewer system. Secondly, a chromic acid waste is produced during the company's operations. A third source of waste results when there is a problem with the company's products. These wastes occur when their is a mistake in the manufacturing process, when a product becomes obsolete, and when a customer returns a product.

In addition to the wastes generated at the site, a portion of the site contains a landfill. The landfill was operated prior to Oakite Products aquiring of the site. It accepted non-chemical industrial wastes. Oakite Products obtained a NJPDES permit in 1987 to monitor the release of contaminants to groundwater from the landfill. Analysis of samples from the monitoring wells showed that releases from the landfill were in excess of primary and secondary drinking water standards for volatile organics, manganese, cadmium, and nitrates during 1988.

Oakite Products has established a record of sloppy housekeeping at the facility. Several RCRA inspectors have noted drums haphazardly placed throughout the facility and outdoors, as well as improperly secured and leaking drums on-site. They have been in violation of several RCRA statutes, including storing hazardous wastes on site for more than 90 days and improperly labelling drums. An inspection in 1988 revealed that there have been chemical spills on the soil in the tank storage area that the company uses to store its raw materials. In addition, in 1985 there was a spill of 200 gallons of nitric acid which forced the evacuation of area residents and businesses.

The site lies over the Brunswick Shale Aquifer. The on-site landfill may be releasing contaminants to the groundwater. There is evidence of chemical spills on site. Therefore, there is a high potential for the release of contaminants to groundwater. Public water companies that serve the Metuchen area do not obtain its water from wells located within 3 miles of the site; however, domestic wells serve some of the population in the area. Also, there is potential for surface water contamination from the

PART IV: SITE SUMMARY AND RECOMMENDATIONS (CONT'D)

facility. The wastes deposited to the on-site soils could migrate off site through storm runoff. There is a wetland located approximately 1.5 miles from the site. Additionally, there is a potential for an air contamination due to the condition of storage containers. There are playgrounds and approximately 7 schools within 1 mile of the site. Due to the potential threat to groundwater, surface water, and air resources, a **MEDIUM PRIORITY** site inspection is recommended for this site.

ATTACHMENT 1

OAKITE PRODUCTS, INC.
METUCHEN, NEW JERSEY

CONTENTS

02-8906-10-PA
Rev. No. 0

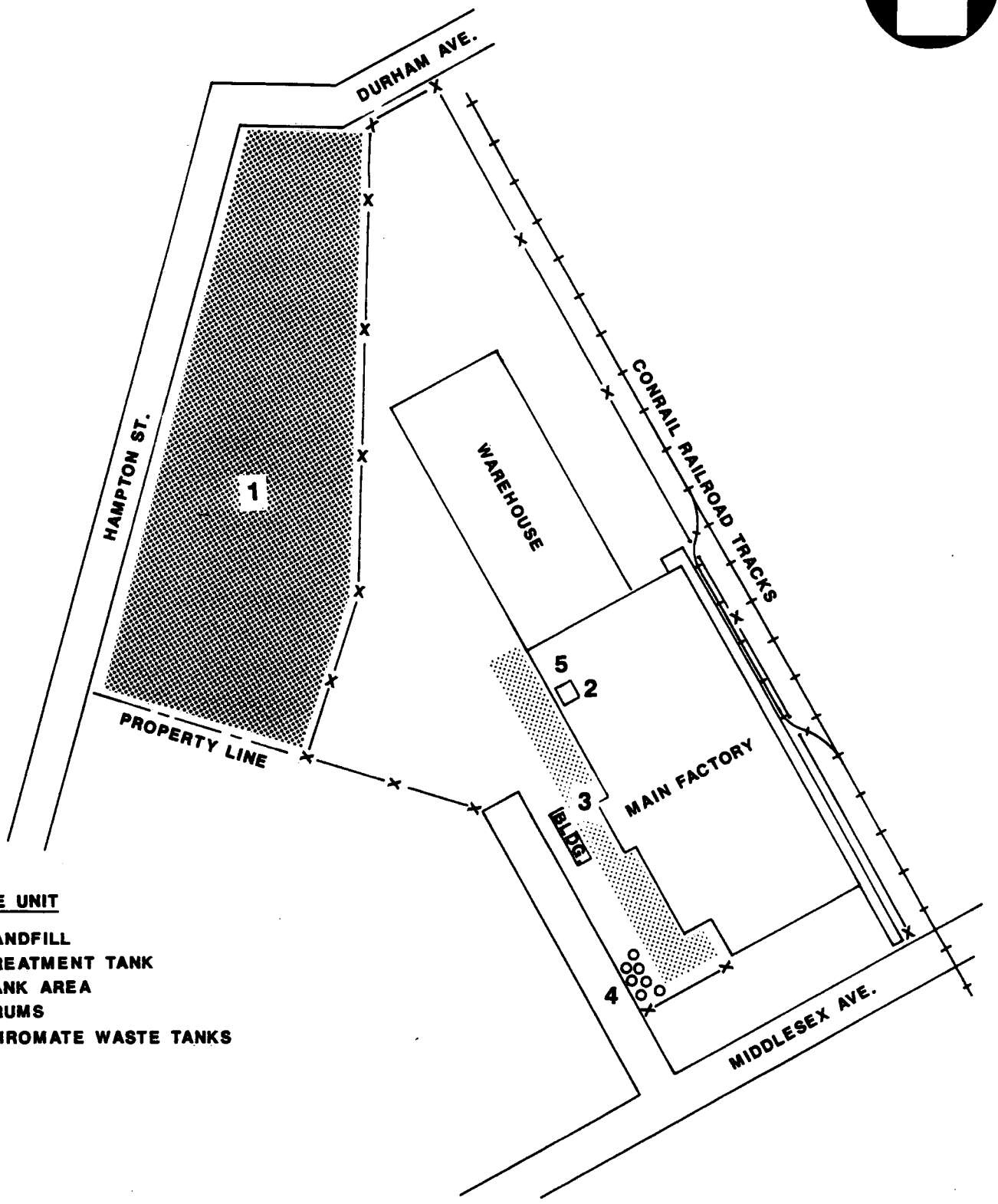
SITE LOCATION MAP

OAKITE PRODUCTIONS, INC., METUCHEN, N.J.

SCALE 1"=2000'

FIGURE 1

NUS CORPORATION



WASTE UNIT

1. LANDFILL
2. TREATMENT TANK
3. TANK AREA
4. DRUMS
5. CHROMATE WASTE TANKS

FIGURE 2

SITE MAP

OAKITE PRODUCTS, INC., METUCHEN, N.J.

SCALE UNKNOWN

NUS CORPORATION

EXHIBIT A

PHOTOGRAPH LOG

OAKITE PRODUCTS, INC.
METUCHEN, NEW JERSEY

OFF-SITE RECONNAISSANCE: JULY 19, 1989

OAKITE PRODUCTS, INC.
METUCHEN, NEW JERSEY
JULY 19, 1989

PHOTOGRAPH INDEX

ALL PHOTOGRAPHS TAKEN BY JIM FROST.

Photo Number	Description	Time
10P	Looking north at front of building.	1212
11P	Looking northwest at drum storage area.	1221

OAKITE PRODUCTS, INC., METUCHEN, NEW JERSEY

10P July 19, 1989 1212
Looking north at front of building.

11P July 19, 1989 1221
Looking northwest at drum storage area.

ATTACHMENT 2

REFERENCES

1. Hazardous Waste Investigation, re: Sodium Sesgi Carbonate spill, Oakite Products Inc., February 29, 1980.

2. U.S. Environmental Protection Agency (EPA), Hazardous Waste Permit Application, EPA Form 3510-3(6-80), November 6, 1980.

3. New Jersey Department of Environmental Protection, Discharge to Groundwater Permit, January 19, 1987.

4. Letter from Faith Dobry, Groundwater Specialist, NJDEP, to Paul Silberbogen, Oakite Products, February 24, 1989.

5. Letter from Robert Berg, Chief, Bureau of Groundwater Management, NJDEP, to Paul Silberbogen, Oakite Products, January 14, 1987.

6. Department of Conservation and Economic Development, Division of Water Policy and Supply, Well Record No. 25-18414.

7. U.S. Environmental Protection Agency (EPA), Notification of Hazardous Waste Activity, EPA Form 8700-12 (6-80), August 18, 1980.

8. New Jersey Department of Environmental Protection, RCRA HWM (TSD) Facility Inspection Form, January 27, 1988.

9. New Jersey Department of Environmental Protection, RCRA HWM (TSD) Facility Inspection Form, November 9, 1981.

10. Wagner, Travis. The Complete Handbook of Hazardous Waste Regulation, Perry-Wagner Publishing Co. 1988.

11. New Jersey Department of Environmental Protection, re: Oakite Nitric Acid Spill/Air Release, September 5, 1985.

12. New Jersey Department of Environmental Protection, RCRA HWM (TSD) Facility Inspection Form, June 15, 1983.

13. Letter from John Flood, Plant Manager, Oakite Products, to Permit Administration Branch. U.S. Environmental Protection Agency, November 9, 1981.

14. Preliminary Assessment Off-Site Reconnaissance Information Reporting Form, Oakite Products Inc., TDD No. 02-8906-10, NUS Corporation Region 2 FIT Edison, New Jersey, July 19, 1989.

15. New Jersey Department of Environmental Protection, Complaint Investigation Form, Oakite Products, October 28, 1988.

16. Department of Conservation and Economic Development, Division of Water Policy and Supply, Well Records No. 25-34986, 25-24564, and 25-6877.

17. Middlesex County 208 Area-wide Waste Treatment Management Planning Task 8, Ground-Water Analysis, November 1976.

REFERENCES (CONT'D)

18. Middlesex County Planning Board, Environmental Systems Section, Policies and Practices for Managing Middlesex County's Groundwater Resources, September 1974.

19. U.S. Geological Survey Bulletin, Studies of the Early Mesozoic Basins of the Eastern United States, 1988.

20. Federal Register, Volume 53, Number 122, Coastal Plain Aquifer Sole Source Classification, June 24, 1988.

21. Uncontrolled hazardous waste site ranking system, A user's manual, 40 CFR, Part 300, Appendix A, 1986.

22. United States Geological Survey, Middlesex County Well Logs, February 20, 1986.

23. Telecon Note: Conversation between Frank Falco, Middlesex Water Company, and John Rieckhoff, NUS Corp., August 10, 1989.

24. Telecon Note: Conversation between Mr. Langenohl, Perth Amboy Water Department, and John Rieckhoff, NUS Corp., July 25, 1989.

25. Telecon Note: Conversation between Mr. Vieser, Elizabethtown Water Company, and Joseph Dvorak, NUS Corp., July 14, 1989.

26. Telecon Note: Conversation between Matt Bolger, Edison Twp. Water Department, and Joseph Dvorak, NUS Corp., July 14, 1989.

27. Telecon Note: Conversation between City Engineer, Edison Twp., and D. Lamond, NUS Corp., June 19, 1986.

28. Three-mile Vicinity Map, based on U.S. Department of the Interior, Geological Survey Topographic Maps, 7.5 minute series, "Perth Amboy, NJ", 1933, photorevised 1970; "Plainfield, NJ", 1943 photorevised 1970.

29. Telecon Note: Conversation between Mr. Van, Metuchen Department of Public Works, and Joseph Dvorak, NUS Corp., August 17, 1989.

30. New Jersey Department of Environmental Protection, Division of Water Resources, Surface Water Quality Standards, N.J.A.C. 7:9-4.1, Index E-Surface Water Classifications of the Raritan River and Raritan Bay Basin, May 1985.

31. U.S. Department of the Interior, Fish and Wildlife Service, Atlas of National Wetlands Inventory Maps for New Jersey, 1984.

32. New Jersey Department of Environmental Protection, Division of Fish, Game and Wildlife, Endangered and Threatened Wildlife in New Jersey, July 20, 1987.

33. U.S. Department of the Interior, Fish and Wildlife Service, Endangered and Threatened Wildlife and Plants, 50 CFR 17.11 and 17.12, April 10, 1987.

34. New Jersey Department of Environmental Protection, Water Supply Overlay, Sheet 25, August 1975.

35. General Sciences Corporation, Graphical Exposure Modeling System (GEMS). Landover, Maryland, 1986.

REFERENCE NO. 1

12-10 63

HW-File
12-10

HAZARDOUS WASTE INVESTIGATION

INSPECTOR: Buys Date: 2/29/80

LOCATION: Oakite Products, Inc

STREET: 700 Middlesex Ave (201) 464-6900 ext 400
John Flood

TOWN: Metuchen NJ

COUNTY: Middlesex HW/ER/12 93

LOT: BLOCK:

ORIGIN OF COMPLAINT: Phone call

COMPLAINT: White powder dumped on roadway

FINDINGS: The white powder was Sodium Sesqi Carbonate. It is a combination of Sodium carbonate and sodium bicarbonate produced by FMC Corp. FMC labels the product as white crystalline, odorless and non-toxic. Oakite uses the Sodium sesqi-carbonate to make a household cleaner like Spic & Span.

On the evening of February 14, 1980, Conrail pulled a hopper car from the Oakite siding. The spill occured because Conrail removed the car while it was still hooked up to unload. Approximately 30,000 lbs were spilled. Oakite cleaned up 95% of this spill. Conrail assured Oakite that they will clean-up the remaining spill.

RECOMMENDATIONS: Since this material is non-toxic I don't feel further follow-up is required.

T.M.

REFERENCE NO. 2

(fill-in areas are spaced for elite type, i.e., 12 characters/inch).

Form Approved OMB No. 158-S80004

FORM 3 RCRA

EPA

U.S. ENVIRONMENTAL PROTECTION AGENCY

HAZARDOUS WASTE PERMIT APPLICATION

Consolidated Permits Program

(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

F N J D 0 0 2 4 5 8 7 7 6 3 1

FOR OFFICIAL USE ONLY

APPLICATION APPROVED	DATE RECEIVED (yr., mo., & day)	COMMENTS

II. FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below *(mark one box only)* to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's EPA I.D. Number in Item I above.

A. FIRST APPLICATION *(place an "X" below and provide the appropriate date)*

[X] 1. EXISTING FACILITY *(See instructions for definition of "existing" facility. Complete item below.)*

[ ] 2. NEW FACILITY *(Complete item below.)*

C 8 — YR. 61 MO. 01 DAY 01 — FOR EXISTING FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED *(use the boxes to the left)*

YR. __ MO. __ DAY __ — FOR NEW FACILITIES, PROVIDE THE DATE *(yr., mo., & day)* OPERATION BEGAN OR IS EXPECTED TO BEGIN

B. REVISED APPLICATION *(place an "X" below and complete Item I above)*

[ ] 1. FACILITY HAS INTERIM STATUS

[ ] 2. FACILITY HAS A RCRA PERMIT

III. PROCESSES – CODES AND DESIGN CAPACITIES

A. PROCESS CODE – Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code*(s)* in the space provided. If a process will be used that is not included in the list of codes below, then describe the process *(including its design capacity)* in the space provided on the form *(Item III-C)*.

B. PROCESS DESIGN CAPACITY – For each code entered in column A enter the capacity of the process.

1. AMOUNT – Enter the amount.
2. UNIT OF MEASURE – For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINER *(barrel, drum, etc.)*	S01	GALLONS OR LITERS
TANK	S02	GALLONS OR LITERS
WASTE PILE	S03	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	S04	GALLONS OR LITERS
Disposal:		
INJECTION WELL	D79	GALLONS OR LITERS
LANDFILL	D80	ACRE-FEET *(the volume that would cover one acre to a depth of one foot)* OR HECTARE-METER
LAND APPLICATION	D81	ACRES OR HECTARES
OCEAN DISPOSAL	D82	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	D83	GALLONS OR LITERS
Treatment:		
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR; GALLONS PER HOUR OR LITERS PER HOUR
OTHER *(Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)*	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-FEET	A
LITERS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
GALLONS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III *(shown in line numbers X-1 and X-2 below)*: A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

C DUP — T/A C 1

LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY 1. AMOUNT	2. UNIT OF MEASURE (enter code)	FOR OFFICIAL USE ONLY
X-1	S 0 2	600	G		5				
X-2	T 0 3	20	E		6				
1	T 0 4	25,000 000	U		7				
2					8				
3					9				
4					10				

Continued from the front.

III. PROCESSES *(continued)*

C. SPACE FOR ADDITIONAL PROCESS CODES OR FOR DESCRIBING OTHER PROCESSES *(code "T04")*. FOR EACH PROCESS ENTERED HERE INCLUDE DESIGN CAPACITY.

T04 Process: - Corrosive waste is neutralized or is already alkaline and is discharged into the municipal sewer system.

IV. DESCRIPTION OF HAZARDOUS WASTES

A. **EPA HAZARDOUS WASTE NUMBER** – Enter the four–digit number from 40 CFR, Subpart D for each listed hazardous waste you will handle. If you handle hazardous wastes which are not listed in 40 CFR, Subpart D, enter the four–digit number*(s)* from 40 CFR, Subpart C that describes the characteristics and/or the toxic contaminants of those hazardous wastes.

B. **ESTIMATED ANNUAL QUANTITY** – For each listed waste entered in column A estimate the quantity of that waste that will be handled on an annual basis. For each characteristic or toxic contaminant entered in column A estimate the total annual quantity of all the non–listed waste*(s)* that will be handled which possess that characteristic or contaminant.

C. **UNIT OF MEASURE** – For each quantity entered in column B enter the unit of measure code. Units of measure which must be used and the appropriate codes are:

ENGLISH UNIT OF MEASURE	CODE	METRIC UNIT OF MEASURE	CODE
POUNDS	P	KILOGRAMS	K
TONS	T	METRIC TONS	M

If facility records use any other unit of measure for quantity, the units of measure must be converted into one of the required units of measure taking into account the appropriate density or specific gravity of the waste.

D. **PROCESSES**

1. PROCESS CODES:
   For listed hazardous waste: For each listed hazardous waste entered in column A select the code*(s)* from the list of process codes contained in Item III to indicate how the waste will be stored, treated, and/or disposed of at the facility.
   For non–listed hazardous wastes: For each characteristic or toxic contaminant entered in column A, select the code*(s)* from the list of process codes contained in Item III to indicate all the processes that will be used to store, treat, and/or dispose of all the non–listed hazardous wastes that possess that characteristic or toxic contaminant.
   Note: Four spaces are provided for entering process codes. If more are needed: (1) Enter the first three as described above; (2) Enter "000" in the extreme right box of Item IV-D(1); and (3) Enter in the space provided on page 4, the line number and the additional code*(s)*.

2. PROCESS DESCRIPTION: If a code is not listed for a process that will be used, describe the process in the space provided on the form.

NOTE: HAZARDOUS WASTES DESCRIBED BY MORE THAN ONE EPA HAZARDOUS WASTE NUMBER – Hazardous wastes that can be described by more than one EPA Hazardous Waste Number shall be described on the form as follows:

1. Select one of the EPA Hazardous Waste Numbers and enter it in column A. On the same line complete columns B,C, and D by estimating the total annual quantity of the waste and describing all the processes to be used to treat, store, and/or dispose of the waste.
2. In column A of the next line enter the other EPA Hazardous Waste Number that can be used to describe the waste. In column D(2) on that line enter "included with above" and make no other entries on that line.
3. Repeat step 2 for each other EPA Hazardous Waste Number that can be used to describe the hazardous waste.

EXAMPLE FOR COMPLETING ITEM IV *(shown in line numbers X-1, X-2, X-3, and X-4 below)* – A facility will treat and dispose of an estimated 900 pounds per year of chrome shavings from leather tanning and finishing operation. In addition, the facility will treat and dispose of three non–listed wastes. Two wastes are corrosive only and there will be an estimated 200 pounds per year of each waste. The other waste is corrosive and ignitable and there will be an estimated 100 pounds per year of that waste. Treatment will be in an incinerator and disposal will be in a landfill.

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
X-1	K 0 5 4	900	P	T 0 3 D 8 0	
X-2	D 0 0 2	400	P	T 0 3 D 8 0	
X-3	D 0 0 1	100	P	T 0 3 D 8 0	
X-4	D 0 0 2				included with above

NOTE: Photocopy this page before completing if you have more than 26 wastes to list.

Form Approved OMB No. 158-S80004

EPA I.D. NUMBER (enter from page 1): W N J D 0 0 2 4 5 8 7 7 6 3 1

FOR OFFICIAL USE ONLY: W DUP 32 DUP

IV. DESCRIPTION OF HAZARDOUS WASTES (continued)

LINE NO.	A. EPA HAZARD. WASTE NO. (enter code)	B. ESTIMATED ANNUAL QUANTITY OF WASTE	C. UNIT OF MEASURE (enter code)	D. PROCESSES 1. PROCESS CODES (enter)	D. PROCESSES 2. PROCESS DESCRIPTION (If a code is not entered in D(1))
1	D002	5145000	T	T04	See IIIC
2	D007	~~NONE~~			Reused in finished products
3	U052	~~NONE~~			Line 3 through Line 7 are raw
4	U123	~~NONE~~			materials used in the manu-
5	U070	~~NONE~~			facturing process and are not
6	U134	~~NONE~~			wastes; they are indicated here
7	U226	~~NONE~~			for the remote possibility of
8					an accidental spill.
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					

EPA Form 3510-3 (6-80)

CONTINUE ON REVERSE

(enter "A", "B", "C", etc. behind the "3" to identify photocopied pages)

IV. DESCRIPTION OF HAZARDOUS WASTES *(continued)*

E. USE THIS SPACE TO LIST ADDITIONAL PROCESS CODES FROM ITEM D(1) ON PAGE 3.

F6: A/55

F6: A/56

EPA I.D. NO. *(enter from page 1)*

F	N	J	D	0	0	2	4	5	8	7	7	6	T/A 3	C 6

V. FACILITY DRAWING

All existing facilities must include in the space provided on page 5 a scale drawing of the facility *(see instructions for more detail).*

VI. PHOTOGRAPHS

All existing facilities must include photographs *(aerial or ground–level)* that clearly delineate all existing structures; existing storage, treatment and disposal areas; and sites of future storage, treatment or disposal areas *(see instructions for more detail).*

VII. FACILITY GEOGRAPHIC LOCATION

LATITUDE *(degrees, minutes, & seconds)*	LONGITUDE *(degrees, minutes, & seconds)*
40 32 30	074 22 10

VIII. FACILITY OWNER

☐ A. If the facility owner is also the facility operator as listed in Section VIII on Form 1, "General Information", place an "X" in the box to the left and skip to Section IX below.

B. If the facility owner is not the facility operator as listed in Section VIII on Form 1, complete the following items:

1. NAME OF FACILITY'S LEGAL OWNER	2. PHONE NO. *(area code & no.)*
E	

3. STREET OR P.O. BOX	4. CITY OR TOWN	5. ST.	6. ZIP CODE
F	G		

IX. OWNER CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED
Edward Wallner V.P. Manufacturing	(X) Edward H Wallner	11-12-1980

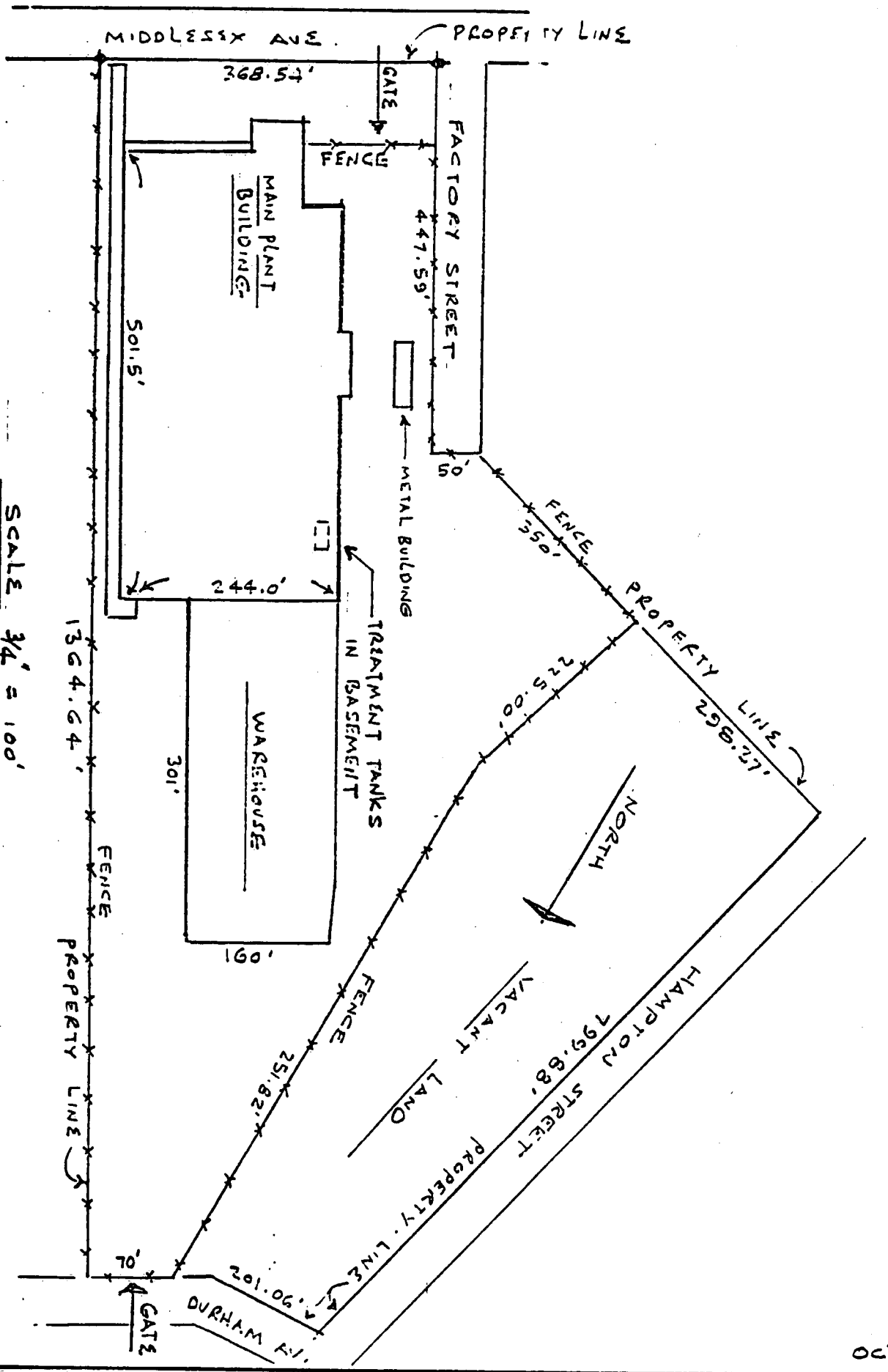
X. OPERATOR CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

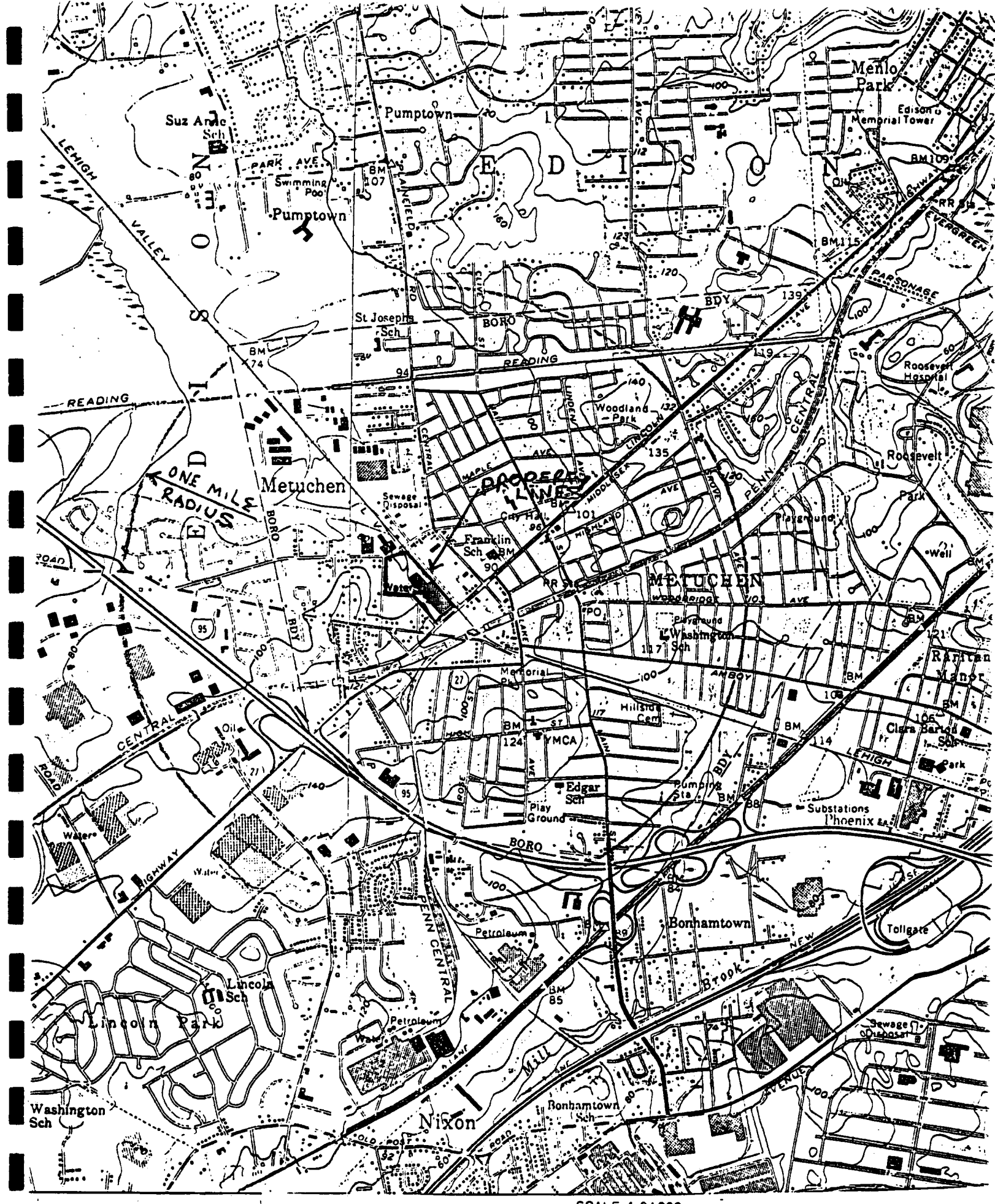
A. NAME *(print or type)*	B. SIGNATURE	C. DATE SIGNED
John Flood Plant Manager	John Flood	11/6/80

V. FACILITY DRAWING *(see page 4)*

See attachment


MIDDLESEX AVE.
PROPERTY LINE
368.54'
GATE
FENCE
FACTORY STREET
447.59'
MAIN PLANT BUILDING
501.5'
METAL BUILDING
50'
FENCE
350'
244.0'
TREATMENT TANKS IN BASEMENT
PROPERTY LINE
298.27'
SCALE 3/4" = 100'
1364.64'
WAREHOUSE
301'
160'
NORTH
FENCE
225.00'
VACANT LAND
PROPERTY LINE
795.88'
HAMPTON STREET
FENCE
PROPERTY LINE
228.52'
70'
201.06'
GATE
DURHAM AVE.

OCT. 30, 1980


Menlo Park
Edison Memorial Tower
Suz Anne Sch
Pumptown
EDISON
PARK AVE
Swimming Pool
LEHIGH VALLEY
BM 107
PLAINFIELD AVE
BM 109
EVERGREEN
PARSONAGE
BM 115
BDY
139
St Josephs Sch
BORO
CLIVE RD
READING
BM 74
Roosevelt Hospital
Woodland Park
LINDEN AVE
LINCOLN AVE
MAPLE AVE
MIDDLESEX AVE
CENTRAL
PENN CENTRAL
Roosevelt Park
Playground
Well
ONE MILE RADIUS
Metuchen
Sewage Disposal
City Hall
Franklin Sch
HIGHLAND AVE
METUCHEN
WOODBRIDGE AVE
PO
Washington Sch
Raritan Manor
AMBOY
Memorial Pk
Hillside Cem
YMCA
Clara Barton Sch
LEHIGH
Edgar Sch
Play Ground
Pumping Sta
Substations
Phoenix
Water
HIGHWAY
Oil
Bonhamtown
Tollgate
Brook
Petroleum
Lincoln Sch
Lincoln Park
Mill
Sewage Disposal
Bonhamtown Sch
Nixon
SCALE 1:24000
MN
GN
1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

REFERENCE NO. 3

Let's protect our earth

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
CN 402
Trenton, N.J. 08625

PERMIT

The New Jersey Department of Environmental Protection grants this permit in accordance with your application, attachments accompanying same application, and applicable laws and regulations. This permit is also subject to the further conditions and stipulations enumerated in the supporting documents which are agreed to by the permittee upon acceptance of the permit.

Permit No.	Issuance Date	Effective Date	Expiration Date
NJ #0063347	1/19/87	3/1/87	2/28/90

Name and Address of Applicant	Location of Activity/Facility	Name and Address of Owner
Oakite Products, Inc. 50 Valley Road Berkley Heights, NJ 07922	Oakite Landfill Hampton Street Boro of Metuchen, Middlesex Cty.	SAME AS APPLICANT

Issuing Division	Type of Permit	Statute(s) N.J.S.A.	Application No.
WATER RESOURCES	NJPDES PERMIT FOR DISCHARGE TO GROUND WATER	58:10A-1 et seq. N.J.A.C. 7:14A-1 et seq.	N/A

This permit requires Oakite Products, Inc. to monitor the ground water at a sanitary landfill in Metuchen Boro by operating and maintaining 4 ground water monitoring wells according to the specific and general conditions of this NJPDES permit. The NJPDES permit is intended to establish a ground water monitoring program at the above named facility. This permit shall not be construed, nor is it intended to be an approval of any activity that the permittee has conducted which adversely affects the environment, ground or surface water quality, or threatens the public health, safety, or welfare.

The data generated through the NJPDES permit will be used by the Department to evaluate the current status and impact of existing facilities on ground water quality. It will also give the Department information to determine if there is any potential or actual threat to public health or safety or damage to the environment due to current or past practices. Based on the information generated by the issuance of this permit, the Department may require the permittee to reduce the quantity of discharge, upgrade or install additional treatment, install additional monitor wells, conduct ground water decontamination procedures or cease discharges to waters of the state.

The issuance of this permit does not indicate that the Department has made a determination of the technical adequacy of the information available. This permit shall not be construed as, nor is it intended to be a long-term approval; these permits are of limited duration.

The issuance of this NJPDES permit does not bind the Department to renew this permit, nor does it relieve the permittee of the duty to submit additional information as specified in Chapters 6 and 10 of the NJPDES regulations at the time of application renewal or as may be required by the Department prior to permit renewal. Additionally, this NJPDES permit does not relieve the permittee of any liabilities associated with public health or safety problems or environmental damage created as a result of the permittee's activities.

Documents attached hereto shall become part of this permit.

Approved by the Department of Environmental Protection
BY AUTHORITY OF:
GEORGE G. MCCANN, P.E., ACTING DIRECTOR
DIVISION OF WATER RESOURCES

ARNOLD SCHIFFMAN, ADMINISTRATOR
~~WATER QUALITY MANAGEMENT ELEMENT~~

DATE

FACT SHEET

for LANDFILLS to Discharge Into the Ground Waters of the State

NAME AND ADDRESS OF APPLICANT:

Oakite Products, Inc.
50 Valley Road
Berkley Heights, NJ 07922

NAME AND ADDRESS OF FACILITY WHERE DISCHARGE OCCURS:

Oakite Landfill
Hampton Street
Metuchen Borough, Middlesex County

RECEIVING WATER:

Ground waters of the state. The discharge is to the Brunswick Formation (Triassic in Age).

DESCRIPTION OF FACILITY:

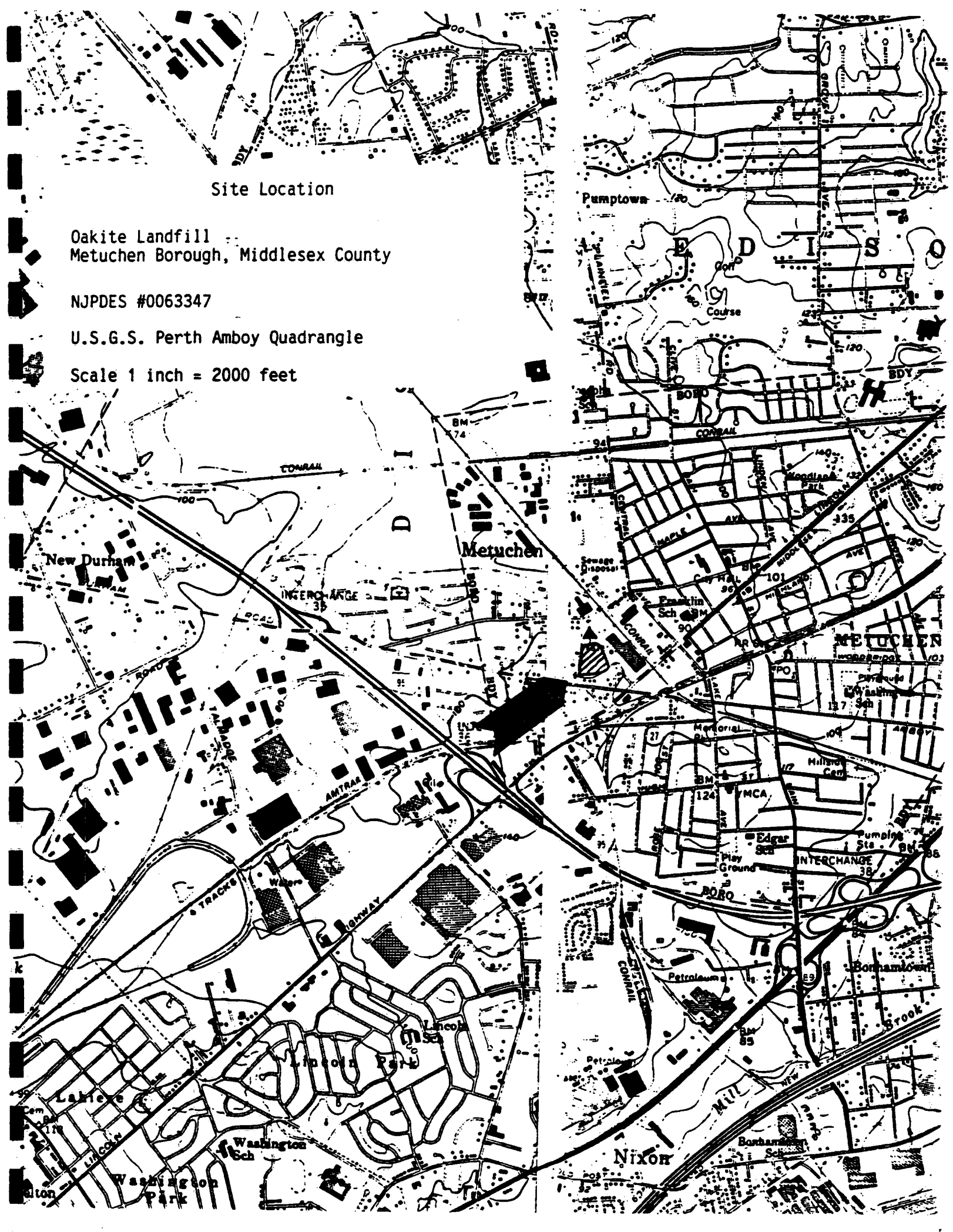
The Oakite Landfill is a closed landfill, approximately 4 acres in size. The contents of the landfill include Non-chemical Industrial Wastes.

DESCRIPTION OF NJPDES GROUND WATER MONITORING PERMIT:

The discharge from the landfill is in the form of leachate. Four (4) ground water monitoring wells will be sampled on a periodic basis.

PERMIT CONDITIONS:

Issue an initial interim NJPDES permit with the attached general and special conditions.


Site Location
Oakite Landfill
Metuchen Borough, Middlesex County
NJPDES #0063347
U.S.G.S. Perth Amboy Quadrangle
Scale 1 inch = 2000 feet
Pamptown
Metuchen
New Durham
CONRAIL
INTERCHANGE
BORO
Edgar Sch
Franklin Sch
Lincoln Park
Washington Park
Washington Sch
Nixon
Bonhamtown
Mill Brook
Woodland Park
Memorial Park
Hillside Cem
Play Ground
Pumping Sta
Petroleum
AMTRAK
TRACKS
MCA

REFERENCE NO. 4

Let's protect our earth

State of New Jersey

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CENTRAL BUREAU OF REGIONAL ENFORCEMENT
TWIN RIVERS OFFICE PLAZA
STATE HIGHWAY 33
HIGHTSTOWN, NEW JERSEY 08520

GEORGE G. McCANN, P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

FEB 24 1989

Mr. Paul M. Silberbogen, Treasurer
Oakite Products, Inc.
50 Valley Road
Berkley Heights, New Jersey 07922

Dear Mr. Silberbogen:

RE: Compliance Evaluation Inspection
Oakite Landfill
NJPDES No. NJ0063347
Munic/County: Metuchen/Middlesex

A Compliance Evaluation Inspection of your facility was conducted by a representative of this Division on February 10, 1989. A copy of the completed inspection report is enclosed for your information.

Your facility received a rating of "CONDITIONALLY ACCEPTABLE" due to the following deficiencies:

1. Exceeded primary and secondary ground water standards identified in the attached table. In response to this deficiency, Oakite Landfill is directed to contact David Froehlich, geologist and permit coordinator for Oakite Landfill who can be reached at (609) 292-9975 or by letter at the following address:

David Froehlich
Division of Water Resources
Bureau of Aquifer Protection
CN 029
401 East State Street
Trenton, New Jersey 08625

This writer is to be copied on any correspondence with David Froehlich.

Please direct all correspondence and inquiries regarding this inspection to this writer who can be reached at 609-426-0786 or by letter through this Division.

Very truly yours,

Faith Dobry

Faith Dobry
Environmental Specialist
Ground Water Section

00363:FD/fd

Enclosure

c: Laszlo Szabo, Health Officer
David Kochel, Administrator, Borough of Metuchen

Form DWR-053
4/78

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
P.O. Box 2809 Trenton, N.J. 08625

DISCHARGE SURVEILLANCE REPORT

PERMIT #: NJ0063347 NO. OF DISCHARGES: LANDFILL CLASS: _____

DISCHARGER: OAKITE LANDFILL

OWNER: OAKITE PRODUCTS, INC.

MUNIC: Metuchen COUNTY: Middlesex WATERSHED CODE: R

LOCATION: HAMPTON STREET

RECEIVING WATERS: Ground Waters of the State STREAM CLASS: _____

LIC. OPERATOR & PLANT CLASS: N/A

TRAINEE/ASST: _____ OTHER INFO: 201-464-6900
PAUL SILBERGOGAN

MAJOR DEFICIENCIES NOTED: exceeded primary and secondary groundwater standards

OVERALL RATING: ☐ Acceptable ☑ Conditionally Acceptable ☐ Unacceptable

EVALUATOR: FAITH DOBRY TITLE: ENVIRON. SPECIALIST

INFORMATION FURNISHED BY: (name) PETE GRSGAN

(title) CONSULTANT (organization) KILLAM

DATE OF INSPECTION: 2-10-89

NEW JEY ---Y DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029, Trenton, N.J. 08625

Permit # NJ0063347

DISCHARGE SURVEILLANCE REPORT

Date 2-10-89

GROUND WATER DISCHARGE EVALUATION

RATING CODES: S = Satisfactory M = Marginal U = Unsatisfactory NA = Not Applicable

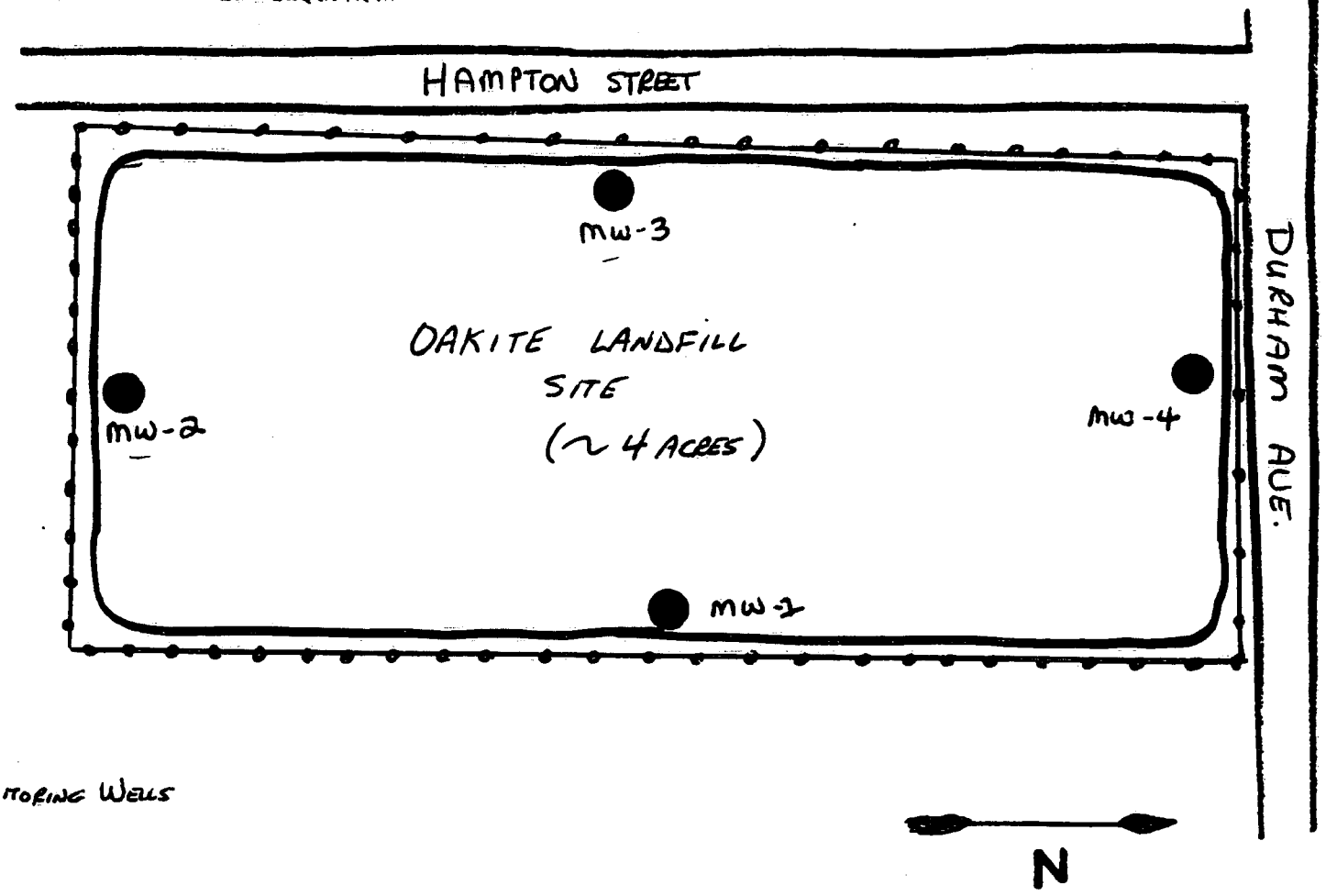
		RATING	COMMENTS
GENERAL	TYPE DGW	-	LANDFILL
	RCRA FACILITY		
	DISCHARGE NUMBER	N/A	
	WASTEWATER SOURCE/FREQ.		
	PUMPS AND PIPING		
	ALTERNATE POWER/ALARM		
	BYPASS		
MONITORING SYSTEM	WATER SUPPLY/MONITORING	N/A	
	AQUIFERS MONITORED	S	BRUNSWICK FORMATION (TRIASSIC IN AGE)
	UPGRADIENT WELLS	S	MW 2: 2530348-1 MW-3: 2530349-0
	DOWNGRADIENT WELLS	S	MW 1: 2530347-3 MW-4: 2530350-3
	SAMPLING PLAN	S	ACCORDING TO PERMIT
	SAMPLING PROCEDURES	S	ACCORDING TO PERMIT
	LAB CERTIFICATION	S	SEE BELOW ***
	RECORDS	S	AVAILABLE UPON REQUEST
	REPORTING	S	UP-TO-DATE
LYSIMETER/ MONITORED WELLS	DRILLING PERMIT NUMBERS	S	SPECIFIED ON MW REPORTS
	WELLS NUMBERED/IDENTIFIED	S	ALL WELLS NUMBERED AND IDENTIFIED
	LOCKS/INTEGRITY	S	ALL WELLS LOCKED
	ABANDONMENT PLAN	N/A	
	ELEVATION INFORMATION	S	SPECIFIED ON MW REPORT
	WATER LEVEL MEASUREMENT	S	SPECIFIED ON MW REPORT
	TURBIDITY FREE	S	
	SUFFICIENT YIELD	S	
UIC	CLASSIFICATION		
	PERC./LEACHING PROBLEMS	N/A	*** ASBESTOS: PRINCETON TESTING LABORATORIES PRINCETON ID# 11118
	SOLVENTS/REPAIRS MADE		
	MAX. PRESSURE & VOLUME		
	CLOSEST USDW/SUPPLY WELLS		ALL ELSE: KILLAM ASSOC., INC. MILLBURN ID# 07059
	MOUND INTEGRITY/COVER		
IMPOUNDMENT	LINING INTEGRITY		: US TESTING LABORATORIES HOBOKEN ID# 09370
	EMBANKMENT INTEGRITY	N/A	
	LEACHATE COLLECTION SYS.		: ACCUTEST ASSOCIATES NORTH BRUNSWICK ID# 12129
	SOLIDS BUILDUP/REMOVAL		
	HEIGHT TO FREEBOARD		
	APPEARANCE		
LAND APPLICATION/ SPRAY SYSTEM	EVEN DISTRIBUTION		
	PONDING/RUNOFF/EROSION		
	SPRAY HEADS	N/A	
	DISCING		
	COVER CROP		
	APPEARANCE		
	BUFFER ZONE		
	SLUDGE STOCKPILED		
OTHER	SEEPAGE/LEACHING	S	NONE OBSERVED
	ODOR/AEROSOLS	S	NONE OBSERVED
	FLOW MONITORING/RECORDING	N/A	

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029, Trenton, N.J. 08625

DISCHARGE SURVEILLANCE REPORT

Permit # NJ0063347
Date 2-10-89

PLANT DIAGRAM AND FLOW SEQUENCE:



DISCHARGE DATA

SOURCE: Monitoring Report Forms PERIOD: —

DIS	PARA	SAMPLE TYPE	PERMIT LIMITS	DATA
			Feb. 88	
MW 1	VO's	Grab	50 ppb	309
MW 4	Cd	↓	10	32,000
	CO_{LI}	↓	4/100 ml	100/100
			MAY 88	
MW 1	Nitro Nitra	Grab	10 ppm	11.3

DIS	PARA	SAMPLE TYPE	PERMIT LIMITS	DATA
			AUG. 88	
MW 4	Nitro N.itr	Grab	10 ppm	14.2
			NOV 88	
MW 1	Mn	Grab	50 ppb	1050
	VO's	↓	50	148
MW 2	Mn	↓	50	590
MW 3	Mn	↓	50	260
	VO's	↓	50	65
MW 4		↓	50	80

MONITORING DEFICIENCIES: —

REFERENCE NO. 5

Chron file

State of New Jersey
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES
CN 029
TRENTON, NEW JERSEY 08625
Water Quality Management

GEORGE G. McCANN, P.E.
DIRECTOR

DIRK C. HOFMAN, P.E.
DEPUTY DIRECTOR

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

JAN 14 1987

Paul M. Silberbogen, Treasurer
Oakite Products, Inc.
50 Valley Road
Berkley Heights, NJ 07922

Re: Oakite Landfill
NJPDES Permit No. NJ0063347
Effective Date:

Dear Permittee:

The following represents the Department's response to comments submitted to the Department during the public comment period for Draft NJPDES Permit #0063347:

1. Comment: More frequent monitoring of the four ground water monitoring wells should be required under the permit.

Response: N.J.A.C. 7:14A-10.12 indicates that quarterly sampling should occur at all landfills in the state for numerous parameters. This section also includes a list of parameters to be analyzed annually. Asbestos was added to the usual list of quarterly parameters as it is believed to be a major constituent of the disposal facility. At this point in time, there is no reason to sample more frequently than required by the regulations. However, if any of the parameters consistently occur above ground water standards, the NJPDES Permit will be modified accordingly.

2. Comment: Oakite Products, Inc. is an innocent landowner which acquired already-contaminated property. The creator of the problem should be responsible for investigating the site conditions as required by the NJPDES permit.

Response: Oakite Products, Inc., as present owner of the landfilled property, is responsible for the implementation of the ground water monitoring program required under the NJPDES Permit pursuant to N.J.A.C. 7:14A-6.7: "The owner or operator of a ... landfill,...that is used to manage non-hazardous waste must implement a ground water monitoring program capable of

determining the facilities impact on the quality of the ground water in the site vicinity." Since the landfill is no longer operating, the current owner is responsible for the NJPDES Permit. However, the owner has every right to pursue the past operator for reimbursement of compliance costs, although the Department is unable to assist in this procedure.

All interested parties will be kept informed as to the status of this NJPDES Permit.

Enclosed is the final NJPDES/Ground Water Discharge Permit to discharge pollutants to the ground waters of the State, issued in accordance with the New Jersey Pollutant Discharge Elimination System Regulations, N.J.A.C. 7:14A-1 et seq. Violation of any condition of this permit may subject you to significant penalties.

Within 30 calendar days following your receipt of this permit, under N.J.A.C. 7:14A-8.6 you may submit a request to the Administrator for an adjudicatory hearing to reconsider or contest the conditions of this permit. Regulations regarding the format and requirements for requesting an adjudicatory hearing may be found in N.J.A.C. 7:14A-8.9 through 8.13. The request should be made to:

Administrator
NJDEP Division of Water Resources
Water Quality Management Element
CN-029
Trenton, New Jersey 08625

Application for renewal of this permit must be submitted at least 180 days prior to expiration of this permit pursuant to N.J.A.C. 7:14A-2.1(f)5.

If you have any questions on this action, please contact Georgeanne Engel of the Bureau of Ground Water Quality Management at (609) 292-0424.

Sincerely yours,

Robert Berg, Chief
Bureau of Ground Water Quality Management

WQM173

REFERENCE NO. 6

FORM

25.44,333.1

DEPARTMENT OF CONSERVATION
AND ECONOMIC DEVELOPMENT
DIVISION OF WATER POLICY & SUPPLY

Permit No. 25-14,414
Application No. _____
County _____

WELL RECORD

1. OWNER STEPHEN POOSIK ADDRESS _____
Owner's Well No. _____ SURFACE ELEVATION 134 Feet (Above mean sea level)
2. LOCATION 215 NEWMAN ST. METUCHEN
3. DATE COMPLETED 1-23-62 DRILLER John P. Keller
4. DIAMETER: top 8 Inches Bottom 8 Inches TOTAL DEPTH 147 Feet
5. CASING: Type 8 Diameter 8 Inches Length 40 Feet
6. SCREEN: Type _____ Size of Opening ___ Diameter _____ Inches Length _____ Feet
Range in Depth { Top _____ Feet / Bottom _____ Feet Geologic Formation clay - shale
Tail piece: Diameter _____ Inches Length _____ Feet
7. WELL FLOWS NATURALLY _____ Gallons per Minute at _____ Feet above surface
Water rises to _____ Feet above surface
8. RECORD OF TEST: Date 1-23-62 Yield 25 Gallons per minute
Static water level before pumping 10 Feet below surface
Pumping level 40 feet below surface after _____ hours pumping
Drawdown 30 Feet Specific Capacity _____ Gals. per min. per ft. of drawdown
How Pumped pump Test How measured _____
Observed effect on nearby wells none
9. PERMANENT PUMPING EQUIPMENT:
Type deep well jet. Mfrs. Name Fairbanks Morse
Capacity 12 G.P.M. How Driven _____ H.P. 1 R.P.M. _____
Depth of Pump in well 80 Feet Depth of Footpiece in well _____ Feet
Depth of Air Line in well ___ Feet Type of Meter on Pump _____ Size ___ Inches
10. USED FOR Domestic AMOUNT { Average _____ Gallons Daily / Maximum _____ Gallons Daily
11. QUALITY OF WATER good Sample: Yes ___ No. ___
Taste good Odor none Color clear Temp. 54 °F
12. LOG _____ Are samples available? _____
(Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy)
13. SOURCE OF DATA _____
14. DATA OBTAINED BY John P. Keller Date 1-23-62

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements etc.)

REFERENCE NO. 7

Please print or type with ELITE type *(12 characters/inch)* in the unshaded areas only.

GSA No. 0246-EPA-07

EPA — U.S. ENVIRONMENTAL PROTECTION AGENCY
NOTIFICATION OF HAZARDOUS WASTE ACTIVITY

INSTALLATION'S EPA I.D. NO.	NJD002458776
I. NAME OF INSTALLATION	OAKITE PRODUCTS INC
II. INSTALLATION MAILING ADDRESS	700 MIDDLESEX AVE METUCHEN, NJ 08840
III. LOCATION OF INSTALLATION	700 MIDDLESEX AVE METUCHEN, NJ 08840

INSTRUCTIONS: If you received a preprinted label, affix it in the space at left. If any of the information on the label is incorrect, draw a line through it and supply the correct information in the appropriate section below. If the label is complete and correct, leave items I, II, and III below blank. If you did not receive a preprinted label, complete all items. "Installation" means a single site where hazardous waste is generated, treated, stored and/or disposed of, or a transporter's principal place of business. Please refer to the INSTRUCTIONS FOR FILING NOTIFICATION before completing this form. The information requested herein is required by law *(Section 3010 of the Resource Conservation and Recovery Act)*.

DETACH

FOR OFFICIAL USE ONLY

COMMENTS: C

INSTALLATION'S EPA I.D. NUMBER	APPROVED	DATE RECEIVED (yr., mo., & day)
FNJD002458776 T/A 3 C 1		80 08 18

I. NAME OF INSTALLATION

II. INSTALLATION MAILING ADDRESS

STREET OR P.O. BOX: 3

CITY OR TOWN: 4 | ST. | ZIP CODE

III. LOCATION OF INSTALLATION

STREET OR ROUTE NUMBER: 5

CITY OR TOWN: 6 | ST. | ZIP CODE

IV. INSTALLATION CONTACT

NAME AND TITLE *(last, first, & job title)*: 2 FLOOD JOHN PLANT MANAGER

PHONE NO. *(area code & no.)*: 201-464-6900

V. OWNERSHIP

A. NAME OF INSTALLATION'S LEGAL OWNER: 8 OAKITE PRODUCTS INC

B. TYPE OF OWNERSHIP *(enter the appropriate letter into box)*: M

F = FEDERAL
M = NON-FEDERAL

VI. TYPE OF HAZARDOUS WASTE ACTIVITY *(enter "X" in the appropriate box(es))*

- [X] A. GENERATION
- [ ] B. TRANSPORTATION *(complete item VII)*
- [X] C. TREAT/STORE/DISPOSE
- [ ] D. UNDERGROUND INJECTION

VII. MODE OF TRANSPORTATION *(transporters only – enter "X" in the appropriate box(es))*

- [ ] A. AIR
- [ ] B. RAIL
- [ ] C. HIGHWAY
- [ ] D. WATER
- [ ] E. OTHER *(specify)*:

VIII. FIRST OR SUBSEQUENT NOTIFICATION

Mark "X" in the appropriate box to indicate whether this is your installation's first notification of hazardous waste activity or a subsequent notification. If this is not your first notification, enter your installation's EPA I.D. Number in the space provided below.

- [X] A. FIRST NOTIFICATION
- [ ] B. SUBSEQUENT NOTIFICATION *(complete item C)*

C. INSTALLATION'S EPA I.D. NO.:

IX. DESCRIPTION OF HAZARDOUS WASTES

Please go to the reverse of this form and provide the requested information.

FOR OFFICIAL USE ONLY

I.D. NUMBER: WI 0000225877621

IX. DESCRIPTION OF HAZARDOUS WASTES (continued from front)

A. HAZARDOUS WASTES FROM NON-SPECIFIC SOURCES. Enter the four-digit number from 40 CFR Part 261.31 for each listed hazardous waste from non-specific sources your installation handles. Use additional sheets if necessary.

	1	2	3	4	5	6
NONE						
	7	8	9	10	11	12

B. HAZARDOUS WASTES FROM SPECIFIC SOURCES. Enter the four-digit number from 40 CFR Part 261.32 for each listed hazardous waste from specific industrial sources your installation handles. Use additional sheets if necessary.

	13	14	15	16	17	18
NONE						
	19	20	21	22	23	24
	25	26	27	28	29	30

C. COMMERCIAL CHEMICAL PRODUCT HAZARDOUS WASTES. Enter the four-digit number from 40 CFR Part 261.33 for each chemical substance your installation handles which may be a hazardous waste. Use additional sheets if necessary.

	31	32	33	34	35	36
See note 6 & 7	U052	U123	U070	U134	U226	
	37	38	39	40	41	42
	43	44	45	46	47	48

D. LISTED INFECTIOUS WASTES. Enter the four-digit number from 40 CFR Part 261.34 for each listed hazardous waste from hospitals, veterinary hospitals, medical and research laboratories your installation handles. Use additional sheets if necessary.

	49	50	51	52	53	54
NONE						

E. CHARACTERISTICS OF NON-LISTED HAZARDOUS WASTES. Mark "X" in the boxes corresponding to the characteristics of non-listed hazardous wastes your installation handles. *(See 40 CFR Parts 261.21 – 261.24.)*

☐ 1. IGNITABLE (D001) ☒ 2. CORROSIVE (D002) ☐ 3. REACTIVE (D003) ☒ 4. TOXIC (D004)

X. CERTIFICATION

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

SIGNATURE	NAME & OFFICIAL TITLE (type or print)	DATE SIGNED
John M Flood	John M. Flood Plant Manager	8/13/80

EPA Form 8700-12 (6-80) REVERSE

Note :- All EPA Hazardous Waste numbers shown in IX section C are raw materials used in the manufacturing process and are not wastes. They are indicated here for the remote possibility of an accidental spill.

REFERENCE NO. 8

DWM-024

NEW JERSEY DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WASTE MANAGEMENT

RFA

INSPECTION REPORT

12-10-03

RFA

REPORT PREPARED FOR:

- ☑ Generator
- ☐ Transporter
- ☐ HWM (TSD) Facility

FACILITY INFORMATION

Name: Oakite Products

Address: 700 Middlesex Ave.
Metuchen 08840

Lot: 37 Block: 71

County: Middlesex

Phone: [redacted] (201) 549-5800

EPA ID#: NJD002458776

Date of Inspection: January 27, 1988

PARTICIPATING PERSONNEL

State or EPA Personnel: Wolf Skacel

Facility Personnel: Don Levitt - Plant Mgr.
John Anderson - Health & Safety Mgr.
John Grantfield - Quality Assurance Mgr.

Report Prepared by Name: W. Skacel

Region: CRO

Telephone #: (609) 426-0700

Reviewed by: Linda Z. Jones

Date of Review: 2-2-88

FACILITY NAME: Oakite Products, Inc.

ADDRESS: 700 Middlesex Ave., Metuchen, NJ 08840

TIME IN: 10:00

TIME OUT: 14:25

COUNTY: Middlesex

EPA ID : NJD002458776

DATE OF INSPECTION: January 27, 1988

PHOTOS TAKEN ☐ YES ☑ NO

If yes, how many? _____

SAMPLE TAKEN ☐ YES ☑ NO NO. OF SAMPLES _____

NJDEP ID # _____

MANIFESTS REVIEWED ☑ YES ☐ NO

Number of manifests in compliance 10 . Reviewed from 1987 – 1985

Number of manifests not in compliance 0

List manifest document numbers of those manifests not in compliance.

GENERATOR INSPECTION CHECKLIST

		YES	NO	N/A
7:26-8.5	Hazardous waste determination			
	(a) Did the generator test its waste to determine whether it is hazardous?	✓	—	—
	Is the waste hazardous?	✓	—	—
7:26-8.5(b)2	Is the generator determining that its waste exhibits a hazardous waste characteristic(s) based on its knowledge of the material(s) or processes used?	✓	—	—
	Has hazardous waste been shipped off site since November 19, 1980?	✓	—	—
	If yes, how many shipments, off site, have been made and describe the approximate size of an average shipment made on a monthly basis. If facility is a small quantity generator, please explain.			
	3-4 times per year - 40 drums per load consisting of D001, D002, F001, X-900, X-726			
7:26-7.4(a)1	Does the generator have an EPA ID #?	✓	—	—
7:26-7.4(a)4	Does each manifest have the following information? Please circle the elements missing and obtain a copy of the incomplete manifests. (List those manifests that are deficient)	✓	—	—
7:26-7.4(a)4i	The generator's name, address and phone number?	✓	—	—
7:26-7.4(a)4ii	The generator's EPA ID number?	✓	—	—
7:26-7.4(a)4iii	The transporter(s) name, address and phone number?	✓	—	—
7:26-7.4(a)4iv	The transporter(s) EPA ID number?	✓	—	—
7:26-7.4(a)4v	The name, address and phone number of the designated TSD facility?	✓	—	—
7:26-7.4(a)4vi	The TSDF's EPA ID number?	✓	—	—
7:26-7.4(a)4vii	The name, type and quantity of hazardous waste being shipped, including such particulars as may be required regarding same?	✓	—	—

SUMMARY OF FINDINGS

FACILITY DESCRIPTION AND OPERATIONS

Oakite Products has operated from this site since 1961. They employ 125 union employees working 1 shift from 7:30 to 4:00, Monday thru Friday. They manufacture cleaning products for industrial users. Windshield washer fluid, soaps, detergents, disinfectants, and caustic cleaning agents are among the products produced.

Raw materials are received in bulk and drums. After checking the material against their specifications for what was ordered, each raw material is given an internal identification number. Products are made in 2000 lb batches which can either be solids or liquids. Bulk production of liquid batches are in 5-45,000 lb capacity vessels. Products are made thru a series of additions which are blended and/or mixed in batch vessels using recycling pumps and mixers. A large portion of the facility is used for warehousing of finished products packaged in 5, 20, 40, 55 gal containers. 250 gallon tote bins are sometimes used for shipment of finished products, and bulk loads are also produced.

Wastes are produced when raw materials or finished products are determined as obsolete. Oakite will attempt to rework the material into another product before discarding. If the waste is water soluble or dissolves readily it will be added

SUMMARY OF FINDINGS

FACILITY DESCRIPTION AND OPERATIONS - Cont'd

to their wastewater discharge collection tank. The 1000 gallon tank is continuously monitored for flow and pH. A pH of 11.4 and flow of 217 gallons per minute was noted at the time of inspection. Oakite has begun to install 2 - large (unknown capacity) fiberglass tanks to accumulate & pre-treat wastewater prior to discharging into the Middlesex County Sewage Authority.

Oakite uses rinsate from their mixing tanks as an ingredient for the next batch produced, thereby eliminating any generation of hazardous waste.

Describe the activities that result in the generation of hazardous waste.

Three waste streams which would require disposal as a hazardous waste were identified, these were: Customore Returns, Manufacturing errors, & Discontinued products. The following waste codes have been used in the past for waste disposal: D001, D002, F001, X-726, & X-900

Identify the hazardous waste located on site, and estimate the approximate quantities of each. (Identify Waste Codes)

10 - 55 gal drums containing methyline chloride U-045
25 - 30 gal drums containing methyline chloride U-045
20 - 55 gal drums containing Chromic Acid & Phosphoric Acid mixed D007/D002

IFIDENTIAL – RECOMMENDA

TO: Linda Jordan

FROM: Wolf Skacel

DATE: Feb. 1, 1988

SUBJECT: RFA Inspection of Oakite Products, Medtuches

This inspection of Oakite Products was conducted at the request of the USEPA as a limited RCRA Facility Assessment (RFA). Key employees needed to answer portions of the RFA questionaire were no longer available or had to be contacted by phone. I m a phone conversation with John Flood [(201)/464-6900, ext. 380] former facility plant manager and now corporate manager of Health, he stated the original Part A applicati was filed in error and an amended Part A was later filed with request for delisting was filed with the USEPA. Mr. Flood will attempt to locate & forward copies of all correspondence between the facilit and the USEPA. To the best of his recollection, no formal closure plan was submitted or performed.

Oakite's current activities include storage in containers and storage of wastewater in a 1000 gallon above ground tank in the facility's basements. It is this writer's belief that Oakite's wastewater tank should be given IWMF status. Containers storage is in original shipping containers and according to facility representatives is for less than 90 days. Both

TO: _____

FROM: _____ DATE: _____

SUBJECT: _____

storage areas are indoor on concrete.

A review of our file on Oakite Products revealed 2 spills directly attributed to Oakite. The first occurred outdoors at a rail siding on 2/14/80 and involved 30,000 lbs of sodium sesqui carbonate (sodium carbonate + sodium bicarbonate). This material was identified as non hazardous and reported as cleaned up. The second spill occurred on 8/13/85 and involved an overfill of Nitric Acid into a raw material storage tank indoors. The spill occurred in a contained area and was subsequently cleaned up by the company. The containment area involved was visually checked with no residuals noted.

Several violations were cited during this inspection, these were:

7:26-9.3(A)3 No accumulation start dates were found on 55 containiners. The containers contained off spec products which their facility representative identified as waste.

26-9.4(d)4iii No segregation by waste type

26-9.4(d)4v ID labels not visible

26-9.4(d)5 No daily documented inspection of container area

26-9.6(e) No aisle space provided

:26-9.7(g) Contingency plan didn't contain a list of emergency equipment, its location, & capabilities

CONFIDENTIAL – RECOMMENDATIONS - cont'd

TO: _____

FROM: _____ DATE: _____

SUBJECT: _____

7:26-9.6(f)1	Dow notification to hospitals
7:26-9.4(g)8	No semi-annual drills conducted involving all employees & loc authorities
	The facility has a new manager (formerly with Union Carbide who will get Oakite into compliance.
	Oakite has 2-1000 gallon tanks (aboveground) in their basement formerly used to store Chromate waste. Use of the tanks ceased in 1973. The tanks were emptied, flushed and associated pumps & pipework disconnected. Removal of the tanks was recommended.

REFERENCE NO. 9

RCRA GENERATOR INSPECTION FORM

COMPANY NAME: Cookie Products Inc

EPA I.D. NUMBER: NJD002495726

COMPANY ADDRESS: 700 Middlesex Ave

COMPANY CONTACT OR OFFICIAL: John Flood

INSPECTOR'S NAME: Bob Carte

TITLE: Plant Manager

BRANCH/ORGANIZATION: NJDEP

CHECK IF FACILITY IS ~~ALSO~~ A TSD FACILITY /4

DATE OF INSPECTION: 11/9/81

	YES	NO	DON'T KNOW
(1) Is there reason to believe that the facility has hazardous waste on site?	✓		

a. If yes, what leads you to believe it is hazardous waste? Check appropriate box:

/4 Company admits that its waste is hazardous during the inspection.

/7 Company admitted the waste is hazardous in its RCRA notification and/or Part A Permit Application.

/4 The waste material is listed in the regulations as a hazardous waste from a nonspecific source (§261.31)

/ / The waste material is listed in the regulations as a hazardous waste from a specific source (§261.32)

/ / The material or product is listed in the regulations as a discarded commercial chemical product (§261.33)

/7 EPA testing has shown characteristics of ignitability, corrosivity, reactivity or extraction procedure toxicity, or has revealed hazardous constituents (please attach analysis report)

/ / Company is unsure but there is reason to believe that waste materials are hazardous. (Explain)

	YES	NO	DON'T KNOW
b. Is there reason to believe that there are hazardous wastes on-site which the company claims are merely products or raw materials?		✓	
Please explain:			
c. Identity the hazardous wastes that are on-site, and estimate approximate quantities of each. waste water from cleaning operations ~~are~~ mixed with Alkaline wastes which are continuously neutralized and sent to the municipal sewer, about 100 gallons on site			
d. Describe the activities that result in the generation of hazardous waste. waste water from wash down of tanks, floors and equipment			
(2) Is hazardous waste stored on site?		✓	
a. What is the longest period that it has been accumulated?			
b. Is the date when drums were placed in storage marked on each drum?			
(3) Has hazardous waste been shipped from this facility since November 19, 1980?	N/A		
a. If "yes," approximately how many shipments were made?			
(4) Approximately how many hazardous waste shipments off site have been made since November 19, 1980?			
a. Does it appear from the available information that there is a manifest copy available for each hazardous waste shipment that has been made?			
b. If "no" or "don't know," please elaborate.			

*(6) Has the generator submitted an annual report to EPA covering the previous calendar year? N/A ___ ___

a. How do you know?

(7) Has the generator received signed copies (from the TSD facility) of all manifests for wastes shipped off site more than 35 days ago? N/A ___ ___

a. If "no," have Exception Reports been submitted to EPA covering these shipments? ___ ___ ___

(8) General comments. Facility is withdrawing its application because neutralization plants are now exempt, see enclosed letter.

* The effective date for this requirement is March 1, 1982.

RCRA INSPECTION REVIEW SHEET

Name of Facility - Oakite Products Inc.
RCRA ID# - NJD 002 453 776
Date of Inspection - 11/3/87
Type of Inspection: (Generator) Transporter (TSD)
Name of EPA/State Inspector - Bob Conte/NJDEP

Findings of Inspection: The facility neutralizes its waste and neutralization plants are now exempt according to RCRA See enclosed letter from Oakite. The facility plans to withdraw permit application. They were not in compliance with 265.110 and 265.142 of proper requirements

Action(s) Taken: None

Action(s) Recommended: withdraw permit application.

REFERENCE NO. 10

The Complete Handbook of Hazardous Waste Regulation

A Comprehensive, Step-by-Step Guide to the Regulation of Hazardous Wastes Under RCRA, TSCA, and Superfund

Travis Wagner

PERRY-WAGNER PUBLISHING CO., INC.

A Leader in the Environmental Information Field

Brunswick, Maine Washington, D.C.

Appendix II

EPA-Listed Hazardous Wastes

EPA waste number	Hazardous waste	Hazard code[1]
Hazardous Waste From Nonspecific Sources		
F001	The following spent halogenated solvents used in degreasing: tetrachloroethylene, trichloroethylene, methylene chloride, 1,1,1-trichloroethane, carbon tetrachloride, chlorinated fluorocarbons, all spent solvent mixture/blends used in degreasing containing, before use, a total of ten percent or more (by volume) of one or more of the above halogenated solvents or those solvents listed in F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F002	The following spent halogenated solvents: tetrachloroethylene, methylene chloride, trichloroethylene, 1,1,1-trichloroethane, chlorobenzene, 1,1,2-trichloro-1,2,2-trifluoroethane, o-dichlorobenzene, and trichlorofluoromethane; all spent solvent mixtures/blends containing, before use, a total of ten percent or more of the above halogenated solvents or those listed in F001, F004, or F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(T)
F003	The following spent nonhalogenated solvents: xylene, acetone, ethyl acetate, ethyl benzene, ethyl ether, methyl isobutyl ketone, n-butyl alcohol, cyclohexanone, methanol; all spent solvent mixtures/blends containing, before use, one or more of the above nonhalogenated solvents, and, a total of ten percent or more (by volume) of one or more of those solvents listed in F001, F002, F004, and F005; and still bottoms from the recovery of these spent solvents and spent solvent mixtures.	(I)
F004	The following spent nonhalogenated solvents: cresols and cresylic acid, nitrobenzene; all spent solvent mixtures/blends containing, before use, a total of ten percent or more (by	(T)

[1]Hazard codes are C = corrosive, H = acutely hazardous, I = ignitable, R = reactive, and T = toxic.

U002 Acetone (I)
U003 Acetonitrile (I,T)
U248 3-(alpha-Acetonylbenzyl)-4-hydroxycoumarin and salts, when present at concentations of 0.3% or less
U004 Acetophenone
U005 2-Acetylaminofluorene
U006 Acetyl chloride (C,R,T)
U007 Acrylamide
U008 Acrylic acid (I)
U009 Acrylonitrile
U150 Alanine, 3-[p-bis(2-chloroethyl)amino] phenyl-, L-
U328 2-Amino-1-methylbenzene
U353 4-Amino-1-methylbenzene
U011 Amitrole
U012 Aniline (I,T)
U014 Auramine
U015 Azaserine
U010 Azirino (2',3',3',4)pyrrolo (1,2-a)indole-4,7-dione, 6-amino-8-[((amino-carbonyl)oxy)methyl)-1,1a,2,8,8a,8b-hexahydro-8a-methoxy-5-methyl-

U157 Benz(j)aceanthrylene, 1,2-dihydro-3-methyl-
U016 Benz(c)acridine
U016 3,4-Benzacridine
U017 Benzal chloride
U018 Benz(a)anthracene
U018 1,2-Benzanthracene
U094 1,2-Benzanthracene, 7,12-dimethyl-
U012 Benzenamine (I,T)
U014 Benzenamine, 4,4'-carbonimidoylbis(N,N-dimethyl)-
U049 Benzenamine, 4-chloro-2-methyl-
U093 Benzenamine, N,N'-dimethyl-4-phenylazo-
U158 Benzenamine, 4,4'-methylenebis(2-chloro)-
U222 Benzenamine, 2-methyl-,hydrochloride
U181 Benzenamine, 2-methyl-,5-nitro
U019 Benzene (I,T)
U038 Benzeneacetic acid, 4-chloro-alpha-(4-chloro-phenyl)-alpha-hydroxy, ethyl ester
U030 Benzene, 1-bromo-4-phenoxy-
U037 Benzene, chloro
U190 1,2-Benzenedicarboxylic acid anhydride
U028 1,2-Benzenedicarboxylic acid [bis(2-ethyl-hexyl)] ester
U069 1,2-Benzenedicarboxylic acid, dibutyl ester
U088 1,2-Benzenedicarboxylic acid, diethyl ester
U102 1,2-Benzenedicarboxylic acid, dimethyl ester
U107 1,2-Benzenedicarboxylic acid, di-n-octyl ester
U070 Benzene, 1,2-dichloro-

U071 Benzene, 1,3-dichloro-
U072 Benzene, 1,4-dichloro-
U017 Benzene, (dichloromethyl)-
U223 Benzene, 1,3-diisocyanatomethyl- (R,T)
U239 Benzene, dimethyl- (I,T)
U201 1,3-Benzenediol
U127 Benzene, hexachloro-
U056 Benzene, hexahydro- (I)
U188 Benzene, hydroxy-
U220 Benzene, methyl-
U105 Benzene, 1-methyl-1,2,4-dinitro-
U106 Benzene, 1-methyl-2,6-dinitro-
U203 Benzene, 1,2-methylenedioxy-4-allyl-
U141 Benzene, 1,2-methylenedioxy-4-propenyl-
U090 Benzene, 1,2-methylenedioxy-4-propyl-
U055 Benzene, (1-methylethyl) (I)
U169 Benzene, nitro- (I,T)
U183 Benzene, pentachloro-
U185 Benzene, pentachloro-nitro-
U020 Benzenesulfonic acid chloride (C,R)
U020 Benzenesulfonyl chloride (C,R)
U207 Benzene, 1,2,4,5-tetrachloro-
U023 Benzene, (trichloromethyl)- (C,R,T)
U234 Benzene, 1,3,5-trinitro (R,T)
U021 Benzidine
U202 1,2-Benzisothiazolin-3-one,1,1-dioxide
U120 Benzo(j,k)fluorene
U022 Benzo(a)pyrene
U022 3,4-Benzopyrene
U197 p-Benzoquinone
U023 Benzotrichloride (C,R,T)
U050 1,2-Benzphenanthrene
U085 2,2'-Bioxirane (I,T)
U021 (1,1'-Biphenyl)-4,4'-diamine
U073 (1,1'-Biphenyl)-4,4'-diamine, 3,3'-dichloro-
U091 (1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethoxy-
U095 (1,1'-Biphenyl)-4,4'-diamine, 3,3'-dimethyl- U024 Bis(2-chloroethoxy) methane
U027 Bis(2-chloroisopropyl) ether
U244 Bis(dimethylthiocarbamoyl) disulfide
U028 Bis(2-ethyhexyl)phthalate (DEHP)
U246 Bromine cyanide
U225 Bromoform
U030 4-Bromophenyl phenyl ether
U128 1,3-Butadiene, 1,1,2,3,4,4-hexachloro
U172 1-Butanamine, N-butyl-N-nitroso-
U035 Butanoic acid, 4-[Bis(2-chloroethyl)amino]benzene-

U031 1-Butanol (I)
U159 2-Butanone (I,T)
U160 2-Butanone peroxide (R,T)
U053 2-Butenal
U074 2-Butene, 1,4-dichloro- (I,T)
U031 n Butyl alcohol (I)

U136 Cacodylic acid
U032 Calcium chromate
U238 Carbamic acid, ethyl ester
U178 Carbamic acid, methylnitroso-, ethyl ester
U176 Carbamide, N-ethyl-N-nitroso-
U177 Carbamide, N-methyl-N-nitroso-
U219 Carbamide, thio-
U097 Carbamoyl chloride, dimethyl-
U215 Carbonic acid, dithallium (I)salt
U156 Carbonochloridic acid, methyl ester (I,T)
U033 Carbon oxyfluoride (R,T)
U211 Carbon tetrachloride
U033 Carbonyl fluoride (R,T)
U034 Chloral
U035 Chlorambucil
U036 Chlordane, technical
U026 Chlornaphazine
U037 Chlorobenzene
U039 4-Chloro-m-cresol
U041 1-Chloro-2,3-epoxypropane
U042 2-Chloroethyl vinyl ether
U044 Chloroform
U046 Chloromethyl methyl ether
U047 beta-Chloronaphthalene
U048 o-Chlorophenol
U049 4-Chloro-o-toluidine, hydrochloride
U032 Chromic acid, calcium salt
U050 Chrysene
U051 Creosote
U052 Cresols
U052 Cresylic acid
U053 Crotonaldehyde
U055 Cumene (I)
U246 Cyanogen bromide
U197 1,4-Cyclohexadienedione
U056 Cyclohexane (I)
U057 Cyclohexanone (I)
U130 1,3-Cyclopentadiene, 1,2,3,4,5,5-hexa- chloro- U058 Cyclophosphamide

U240 2,4-D, salts and esters

U059 Daunomycin
U060 DDD
U061 DDT
U142 Decachloro octahydro-1,3,4-metheno-2H-cyclobuta(c,d) pentalen-2-one
U062 Diallate
U133 Diamine (R,T)
U221 Diaminotoluene
U063 Dibenz(a,h)anthracene
U063 1,2:5,6-Dibenzanthracene
U064 1,2:7,8-Dibenzopyrene
U064 Dibenz(a,i)pyrene
U066 1,2-Dibromo-3-chloropropane
U069 Dibutyl phthalate
U062 S-(2,3-Dichloroallyl)diisopropylthiocarbamate
U070 o-Dichlorobenzene
U071 m-Dichlorobenzene
U072 p-Dichlorobenzene
U073 3,3'-Dichlorobenzidine
U074 1,4-Dichloro-2-butene (I,T)
U075 Dichlorodifluoromethane
U192 3,5-Dichloro-N-(1,1-dimethyl-2-propynyl)benzamide
U060 Dichloro diphenyl dichloroethane
U061 Dichloro diphenyl trichloroethane
U078 1,1-Dichloroethylene
U079 1,2-Dichloroethylene
U025 Dichloroethyl ether
U081 2,4-Dichlorophenol
U082 2,6-Dichlorophenol
U240 2,4-Dichlorophenoxyacetic acid, salts and esters
U083 1,2-Dichloropropane
U084 1,3-Dichloropropene
U085 1,2:3,4-Diepoxybutane (I,T)
U108 1,4-Diethylene dioxide
U086 N,N-Diethylhydrazine
U087 O,O-Diethyl-S-methyl-dithiophosphate
U088 Diethyl phthalate
U089 Diethylstilbestrol
U148 1,2-Dihydro-3,6-pyradizinedione
U090 Dihydrosafrole
U091 3,3'-Dimethoxybenzidine
U092 Dimethylamine (I)
U093 Dimethylaminoazobenzene
U094 7,12-Dimethylbenz(a)anthracene
U095 3,3'-Dimethylbenzidine
U096 alpha,alpha-Dimethylbenzylhydroperoxide (R)
U097 Dimethylcarbamoyl chloride
U098 1,1-Dimethylhydrazine

U099 1,2-Dimethylhydrazine
U101 2,4-Dimethylphenol
U102 Dimethyl phthalate
U103 Dimethyl sulfate
U105 2,4-Dinitrotoluene
U106 2,6-Dinitrotoluene
U107 Di-n-octyl phthalate
U108 1,4-Dioxane
U109 1,2-Dipheylhydrazine
U110 Dipropylamine (I)
U111 Di-N-propylnitrosamine

U001 Ethanal (I)
U174 Ethanamine, N-ethyl-N-nitroso-
U067 Ethane, 1,2-dibromo-
U076 Ethane, 1,1-dichloro-
U077 Ethane, 1,2-dichloro-
U114 1,2-Ethanediylbiscarbamodithioic acid
U131 Ethane, 1,1,1,2,2,2-hexachloro-
U024 Ethane, 1,1'-[methylenebis(oxy)]bis(2-chloro)-
U003 Ethanenitrile (I,T)
U117 Ethane, 1,1'-oxybis- (I)
U025 Ethane, 1,1'-oxybis(2-chloro)-
U184 Ethane pentachloro-
U208 Ethane, 1,1,1,2-tetrachloro-
U209 Ethane, 1,1,2,2-tetrachloro-
U218 Ethanethioamide
U247 Ethane, 1,1,1-trichloro-2,2-bis(p-methoxyphenyl)
U227 Ethane, 1,2,1-trichloro-
U043 Ethene, chloro-
U042 Ethene, 2-chloroethoxy-
U078 Ethene, 1,1-dichloro-
U079 Ethene, trans-1,2-dicloro-
U210 Ethene, 1,1,2,2-tetrachloro-
U173 Ethanol, 2,2'-(nitrosoimino)bis-
U004 Ethanone, 1-phenyl-
U006 Ethanoyl chloride (C,R,T)
U112 Ethyl acetate (I)
U113 Ethyl acrylate (I)
U238 Ethyl carbamate (urethan)
U038 Ethyl 4,4'-dichlorobenzilate
U359 Ethylene glycol monoethyl ether
U114 Ethylenebis(dithiocarbamic acid)
U067 Ethylene dibromide
U077 Ethylene dichloride
U115 Ethylene oxide (I,T)
U116 Ethylene thiourea

U117 Ethyl ether
U076 Ethylidene dichloride
U118 Ethylmethacrylate
U119 Ethyl methanesulfonate

U139 Ferric dextran
U120 Fluoranthene
U122 Formaldehyde
U123 Formic acid (C,T)
U124 Furan (I)
U125 2-Furancarboxaldehyde (I)
U147 2,5-Furandione
U213 Furan, tetrahydro- (I)
U125 Furfural (I)
U124 Furfuran (I)

U206 D-Glucopyranose,2-deoxy-2(3-methyl-3-nitro-soureido)-
U126 Glycidylaldehyde
U163 Guanidine, N-nitroso-N-methyl-N'nitro-

U127 Hexachlorobenzene
U128 Hexachlorobutadiene
U129 Hexachlorocyclohexane(gamma isomer)
U130 Hexachlorocyclopentadiene
U131 Hexachloroethane
U132 Hexachlorophene
U243 Hexachloropropene
U133 Hydrazine (R,T)
U086 Hydrazine, 1,2-diethyl-
U098 Hydrazine, 1,1-dimethyl-
U099 Hydrazine, 1,2-dimethyl-
U109 Hydrazine, 1,2-diphenyl-
U134 Hydrofluoric acid (C,T)
U134 Hydrogen fluoride (C,T)
U135 Hydrogen sulfide
U096 Hydroperoxide, 1-methyl-1-phenylethyl- (R)
U136 Hydroxydimethylarsine oxide

U116 2-Imidazolidinethione
U137 Indeno(1,2,3-cd)pyrene
U139 Iron dextran
U140 Isobutyl alcohol (I,T)
U141 Isosafrole

U142 Kepone

U143 Lasiocarpine
U144 Lead acetate
U145 Lead phosphate
U146 Lead subacetate
U129 Lindane

U147 Maleic anhydride
U148 Maleic hydrazide
U149 Malononitrile
U150 Melphalan
U151 Mercury
U152 Methacrylonitrile (I,T)
U092 Methanamine, N-methyl- (I)
U029 Methane, bromo-
U045 Methane, chloro- (I,T)
U046 Methane, chloromethoxy-
U068 Methane, dibromo-
U080 Methane, dichloro-
U075 Methane, dichlorodifluoro
U138 Methane, iodo-
U119 Methanesulfonic acid, ethyl ester
U211 Methane, tetrachloro-
U121 Methane, trichlorofluoro-
U153 Methanethiol (I,T)
U225 Methane, tribromo-
U044 Methane, trichloro-
U121 Methane, trichlorofluoro-
U123 Methanoic acid (C,T)
U036 4,7-Methanoindan, 1,2,4,5,6,7,8,8-octachloro-3a,4,7,7a- tetrahydro-
U154 Methanol (I)
U155 Methapyrilene
U247 Methoxychlor
U154 Methyl alcohol (I)
U029 Methyl bromide
U186 1-Methylbutadiene (I)
U045 Methyl chloride (I,T)
U156 Methyl chlorocarbonate (I,T)
U226 Methyl chloroform
U157 3-Methylcholanthrene
U158 4,4'-Methylenebis(2-chloroaniline)
U132 2,2'-Methylenebis(3,4,6-trichlorophenol)
U068 Methylene bromide
U080 Methylene chloride
U122 Methylene oxide
U159 Methyl ethyl ketone (I,T)
U160 Methyl ethyl ketone peroxide (R,T)
U138 Methyl iodide

U161 Methyl isobutyl ketone (I)
U162 Methyl methacrylate (I,T)
U163 N-Methyl-N'-nitro-N-nitrosoguanidine
U161 4-Methyl-2-pentanone (I)
U164 Methylthiouracil
U010 Mitomycin C

U059 5,12-Naphthacenedione,(8S-cis)-8-acetyl-10-[(3-amino-2,3,6-trideoxy-alpha-L-lyxo-hexopyranosyl)oxyl)-7,8,9,10-tetrahydro-6,8,11-trihydroxy-1-methyoxy-
U165 Naphthalene
U047 Naphthalene,2-chloro-
U166 1,4-Naphthalenedione
U236 2,7-Naphthalenedisulfonic acid,3,3'-[(3,3'-dimethyl-(1,1'bi-phenyl)-4,4'diyl)]-bis(azo)bis(5-amino-4-hydroxy)-, tetrasodium salt
U166 1,4,Naphthaquinone
U167 1-Naphthylamine
U168 2-Naphthylamine
U167 alpha-Naphthylamine
U168 beta-Naphthylamine
U026 2-Naphthylamine, N,N'-bis(2-chloromethyl)-
U169 Nitrobenzene (I,T)
U170 p-Nitrophenol
U171 2-Nitropropane (I)
U172 N-Nitrosodi-n-butylamine
U173 N-Nitrosodiethanolamine
U174 N-Nitrosodiethylamine
U111 N-Nitroso-N-propylamine
U176 N-Nitroso-N-ethylurea
U177 N-Nitroso-N-methylurea
U178 N-Nitroso-N-methylurethane
U179 N-Nitrosopiperidine
U180 N-Nitrosopyrrolidine
U181 5-Nitro-o-toluidine
U193 1,2-Oxathiolane,2,2-dioxide
U058 2H-1,3,2-Oxazaphosphorine,2-[bis(2-chloroethyl)amino] tetrahydro-, oxide 2-

U115 Oxirane (I,T)
U041 Oxirane, 2-(chloromethyl)-

U182 Paraldehyde
U183 Pentachlorobenzene
U184 Pentachloroethane
U185 Pentachloronitrobenzene
U186 1,3-Pentadiene (I)
U187 Phenacetin

REFERENCE NO. 11

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO File through Vince Krisak

FROM Joseph E. Hoyle JEH DATE September 5, 1985

SUBJECT Oakite Products, Inc., Metuchen, Middlesex County

August 13, 1985

Responded to nitric acid spill at the above location.

Upon arriving on site I met the local fire officials and was briefed on the events.

Approximately 0930 hours during transfer operations, a spill occurred involving 200 gallons of 70% nitric acid. This happened when the company was servicing a 4300 gallon holding tank. The spill was a direct result of over servicing. When this happened the acid came in contact with moisture a yellowish colored cloud developed. The majority of the liquid was contained in the dike area, soda ash was applied to neutralize the reaction.

Due to the nature of severity of the situation the main plant of 130 personnel was shut down. Local businesses were required to curtail their operations until the emmgency was abated. According to the fire/emergency response (volunteer squad) two people down wind of the spill were overcome by the cloud with respiratory problems and taken to JFK Medical Center for observation. Two companies (Epic and Oakite) evacuated their employees up wind of the plume and area residents were asked to leave their homes. The plume covered a quarter mile radius.

Rad 40 (Haz. Materials Emergency Response) on site confering with the plant manager on the remedial action and cleanup action. John Flood, plant manager, indicated that all emergency precautions have been taken and neutralization of spill is in progress.

1215 Hours - John Flood, plant manager, indicated that work will restart inside plant at 1300 hours.

All barricades are in place and only authorized personnel were allowed to enter into the spill scene. The local news papers and TV were on site for coverage. DEP emergency response team (Rad 1 and 60) on site for update. EPA on site with air monitoring and sampling devices. The acid plume has started to dissipate rapidly at this point. The rescue squads plus fire fighters are preparing to enter into the facility for the neutralization process, ambient temperature 97° hazy and humid.

1300 Hours - Oakite plant manager, John Flood, issues a back to work order for his employees. The local municipality (emergency squad and health) advised John Flood that he can be held liable for any further emergencies plus the welfare of the surrounding area. 12 drums of soda ash are being applied to the spill area in hopes of neutralizing the acid. Fire fighters have donned class "B" safety equipment, plus after each man has been in the spill area

for 15 minutes they are washed down with high pressure hoses, given soaking wet towels and juice they were relieved. During the neutralizing phase of the acid,it was brought to the attention that possible discharge into the sewer system could be used,provided that pH levels of 6 to 8 be maintained. In regards to our division's (Waste Management) requirements, I made the necessary communication with Robert Rowe, Head Chemist, Middlesex County Utilities Authority (201) 721-3800, to gain permission for the disposal and discharge.

In speaking with the MCUA, I explained the situation plus the Department's policy, it was stated that a pH of 7 was the ideal, but no lower than 6, nor higher than 8, anything other than that cannot be introduced into the system. I relayed this information to the appropriate sources and expressed the need for strict control over the disposal aspects. At 1400 hours neutralization of the remaining acid in the containment area under way. Local fire departments on standby with fog sprayers in the event of another mishap occurred. Sodium carbonate being applied in massive quantities. The decision to drum spill cleanup material was made when all of the acid spill involved was rendered safe. This would in turn be transported to a blender which 1500 gallons of water is added. This will be subsequently tested for proper pH and adjusted accordingly. An air sampling team was made up and sent down wind with proper respiratory protection during the neutralization process. At the sewer outlets pH samples were taken with results of 5 to 6 pH. 1400 hours the evacuation of approximately 1300 inhabitants was lifted, neutralization operations still underway. The site was declared safe from all possible hazard. Local rescue squads returned to their respective locations, fire department secured the site. The reasoning for this is because the Oakite fire brigade was able to apply enough soda ash to render the nitric acid inert.

I cautioned the plant manager that should he fail to properly treat the soda ash and acid it would cause a substantial impact on the environment. The company indicated that they would not start off the disposal aspects until all of the acid has been neutralized. This would not take place until August 14, 1985. Approximately 0900 hours the person who would be in charge of this operation, a John Granfield, production manager. At approximately 1500 hours the neutralizing process was complete, 12 drums of soda ash was used. In speaking with the plant manager, I indicated the desire to be present during the initial phases of disposal with an occasional spot check of progress. The composition of the item to be disposed of is in a muck type consistency. There is also a combination of soda ash, nitric acid, dirt and paper.

1615 Hours - Site of spill has been declared clear, streets have been opened, stores have been opened, all other businesses have been returned to normal. I spoke again to the plant manager, in what policies and procedures our division will taken inasfar as disposal and final cleanup. When all other conversations pertaining to future events this inspector secured the site.

FOC20:dg

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO File through Vince Krisak

FROM Joseph E. Hoyle

DATE September 9, 1985

SUBJECT Oakite Products, Inc., Metuchen, Middlesex County

August 14, 1985

Reason for this report is the initial start of disposal of nitric acid/soda ash solution.

0900 Hours - Arrived at above facility for inspection of disposal practices plus to insure that all applicable protocols are adhered to, proper pH levels a generation point. I spoke to John Flood, plant manager, and he indicated that John Granfield, production manager, would be the overall supervisor of the operation. A John Fromholz, manager, at the facility was to be my tour guide. I requested such, after observing on the previous days incident several environmental discrepancies. Mr. Fromholz introduced himself and we went to where the spill had occurred.

At the point of discharge the fire brigade was shoveling the solidified nitric acid into 55-gallon drums and cleaning out the containment pit. Mr. Fromholz indicated that he did not know exactly when they would be complete. The forward wall was removed so that the workers could gain access to the rear of the holding tank. In speaking with some of the workers later on in the day they were going to have a tanker on site to remove the rest of the acid from the tank for storage.

Mr. Granfield arrived and we then started the tour. Prior to leaving the spill site, I inquired as to the disposition of the drums that were sitting outside. These drums contained the name of hydroflouric acid, and the description being of highly deteriorated. At least four wooden pallets where these drums were placed showed evidence that leakage had occurred. I asked Mr. Granfield about this and he knew nothing concerning the matter. We then moved back into the building through a section which belonged to the Epic Industries. Epic Industries is a subsidiary of Oakite, both companies are housed in the same common building with partitions separating the two. As we traveled through the building to the mixing chamber area, I observed the following:

1. Evidence of oil spills on floors.

2. Unmarked drums haphazardly placed on sides for storage (steel drums).

3. Poor (very) lighting in several areas - these areas are in which drums and bags of material are stored. The total amount is unknown at time of writing.

I brought this to John Granfield's attention, he indicated that they were in the process of refurbishing and reorganizing the overall operation of the plant. Our tour ended on the upper levels of the plant. On this level (2nd floor) I was able to observe four fiber drum laboratory packs. These packs were to have

been shipped several days prior to my visit. These laboratory packs consisted of vial after vial of waste blended liquids, chlorinated waste, oily waste, soluable non-chromate waste and chromate waste. Several vials (bottles) have this nomenclature on them:

Smith, Inc.
Chemical and Color Company
104-20 Dunkirk Street
Jamaica, NY 11421

After noting the fact that these lab packs were to be removed we went to the mixing chamber area. In this area the mixing chamber was inoperative because a previous operation had just been concluded and the chamber has not been flushed and cleaned so that the disposal operation can commence. Behind this 3200 gallon mixing chamber can be found 22 drums of hazardous waste marked "Waste Corrosive NOS EPA 002 UN 1759".

All of the 22 drums have a hazardous waste label attached to them, with a start date of 11/20/84, each one of the drums have loose rings, also on the drums the labels have this manifest #M10516717. Adjacent to these 22 hazardous waste drums is located 6 each 55-gallon drums marked solvent. These drums had the same physical integrity as the hazardous waste drums, poor condition, corrosion (pitting). I informed Mr. Granfield of the seriousness, of having such a large quantity of hazardous waste on site for more than 90 days without a permit.

NOTE: The direction and location of these drums were in close proximity of the mixing chamber which flows directly into the storm sewer system. This would indicate that possible previous practices incorporated illegal disposal of hazardous waste. I indicated this to Mr. Granfield and he stated that it was not the company's intention to do such a thing.

At this point it is obvious that no disposal operation will start, so we returned back to the main office to where I issue a Notice of Violation - NJAC 7:26-9.3b - accumulation of hazardous waste on site more than 90 days without a permit start date 11/20/84.

NOTE: In reviewing the files and manifests it was brought to my attention that manifest #M10516717 was not issued for the above waste but was used to have another type waste removed from site. This secondary waste was never removed under the manifest number but disposed of on another hazardous waste manifest, number unknown - hazardous waste unknown, no UN/AN #, no EPA waste code either. There clearly shows that two different hazardous waste were manifested under the same number but with different start dates, Nov. 20, 1984, and March 23, 1985.

I made it clearly understood that they were in direct violation of hazardous waste regulations and substantial penalties will be assessed to their company.

After issuing the violation, I inquired as to when they will be starting the disposal operations and the procedure in which they will follow. Mr. Granfield said that they (Oakite) will contact our office prior to the start of the operation and advise us as the procedures used.

After these final conversations, this inspector secured the site.

MEMO

NEW JERSEY STATE DEPARTMENT OF ENVIRONMENTAL PROTECTION

TO File through Vincent Krisak

FROM Joseph E. Hoyle

DATE September 6, 1985

SUBJECT Oakite Products Inc.
Metuchen, Middlesex County

August 16, 1985

Returned back to the above facility for initial start of the disposal operation. There are 40 drums of material to be disposed of, not all of the drums of spill debris will be sent through the sewer system only 30, the other remaining drums containing solid materials will be manifested* out as hazardous waste. At the time of my arrival, the disposal operations have not started, they are still removing some of the residual soda ash material from the dike area. According to John Granfield, whom I met, informed me that the company had procured a tanker vehicle in which to load the acid from the holding tank into the tanker.

Allied Bulk Carriers
Englishtown, NJ
(201) 446-9100
1CC MC 154152
Comm
XH98HY

As we were discussing the events and the order in which they were to be done, I observed the fire brigade preparing to attach the evacuating lines to the truck/trailer and to a pump. I noted that during the hook up phase there were 2 lines that had material deficiencies: (1) a very sharp crimp; (2) in one section of the line, the outer shielding has been worn down past the outer metal coating, thereby exposing the granular structures, to the environment. I pointed this out to Mr. Granfield and he made the necessary corrections.

I inquired again when will they start their disposal process and Mr. Granfield indicated as soon as possible. There are 40 drums staged, prepared for treatment. Mr. Granfield instructed the forklift truck driver to take 4 pallets of drums to the elevator for transport. During this operation the fire brigade finally changed the sections of hoses, plus started working on removing the acid from the tank to the tanker. Fog sprayers, fire extinguishers, high pressure water hoses and appropriately dressed personnel. Each man was instructed verbally the extent of operations. Donned with class "B" protection transfer operations commenced.

From out top of the tanker, a mustard colored cloud arose, but did not spread as in the week prior. Both John Granfield and myself went to the mixing chamber, where 1500 gallons of water was being poured into it. When the first pallet reached the mixing chamber, 4 drums of soda ash and nitric acid were poured into it.

A sample was taken and analyzed, the pH was in the 10.07 range. I noted that this pH reading was much too high and cannot be introduced into the system. Mr. Granfield used phosphoric acid to bring the pH down in the sample. Another sample was taken, and analyzed. This time the pH ranged 7.6. I recommended that the pH level be maintained at 7.0 and no higher or lower, this will insure proper treatment to disposal.

325 pounds more of phosphoric acid was introduced into the mixture to bring the pH levels down. Again I observed the transfer operation, the pump which transfers the acid from tank to truck is operating at 15 gal. per minute with no static head pressure. The nitric acid plume was small in observating. No emergency developed during the transfer operation. I advised John Granfield of my intent to monitor the disposal process, periodically untill all substances are gone. During our conversation, the transfer operation was nearing completion, as aspects of safety were being adhered to. I asked Mr. Granfield to advise me when they were ready for disposal operations and Granfield indicated they will probably start the next working day, and they will give me a call.

After final conversations and recommendations, this inspector secured the site.

FOC20:ar

REFERENCE NO. 12

NJDEP INSPECTION FORM

Report Prepared for:

Generator [X]

Transporter [ ]

HWM (TSD) facility [X]

Facility Information

Name: OAKITE PRODUCTS INC.

Address: 700 Middlesex Ave
Metuchen N.J. 08840

Lot: 37 Block: 71

County: Middlesex

Phone: (201) 464 6900

EPA ID#: NJD002458776

Date of Inspection: 6/15/83

Participating Personnel

State or EPA personnel: Mike NALBONE NJDEP

Facility personnel: John Flood
Plant Manager

Report Prepared by Name: Mike Nalbone

Region: Central

Telephone #: (609) 292-9592

Reviewed by: Kevin Gaffney

Date of Review: 7-12-83

FACILITY NAME: Orkite Products

ADDRESS: 700 Middlesex Ave
Metuchen NJ

TIME IN: _____

COUNTY: Middlesex

TIME OUT: _____

EPA ID #: NJD002458776

DATE OF INSPECTION: 6/15/83

PHOTOS TAKEN ☐ YES ☒ NO

If yes, how many? _____

SAMPLES TAKEN ☐ YES ☒ NO NUMBER OF SAMPLES _____

NJDEP ID # _____

MANIFESTS REVIEWED ☒ YES ☐ NO

Number of manifests in compliance Two

Number of manifests not in compliance _____

List manifest document numbers of those manifests not in compliance.

GENERATOR INSPECTION CHECKLIST

		YES	NO	N/A
7:26-8.5	Hazardous waste determination			
	(a) Did the generator test its waste to determine whether it is hazardous?	X	—	—
	Is the waste hazardous?	X	—	—
	Is the generator determining that its waste exhibits a hazardous waste characteristic(s) based on its knowledge of the material(s) or processes used?	X	—	—
	Has hazardous waste been shipped off site since November 19, 1980?	—	X	—
	If yes, how many shipments, off site, have been made and describe the approximate size of an average shipment made on a monthly basis. If facility is a small quantity generator, please explain.	ALKALINE WASTE IS Placed in the Sewer line.		
	NOTE* Treatment occurs prior to discharge by neutralization.			
7:26-7.4(a)1	Does the generator have an EPA ID #?	X	—	—
7:26-7.4(a)4	Does each manifest have the following information? Please circle the elements missing and obtain a copy of the incomplete manifests. (List those manifests that are deficient)	INFORMATION below refers to MANIFESTS used IN 1981		
7:26-7.4(a)4i	The generator's name, address and phone number?	X	—	—
7:26-7.4(a)4ii	The generator's EPA ID number?	X	—	—
7:26-7.4(a)4iii	The transporter(s) name, address and phone number?	X	—	—
7:26-7.4(a)4iv	The transporter(s) EPA ID number?	X	—	—
7:26-7.4(a)4v	The name, address and phone number of the designated TSD facility?	X	—	—
7:26-7.4(a)4vi	The TSDF's EPA ID number?	X	—	—
7:26-7.4(a)4vii	The name, type and quantity of hazardous waste being shipped, including such particulars as may be required regarding same?	X	—	—

MANIFEST	DATE	TSD Facility	WASTE Type
0077238	9/17/81	SCA	D007
0077386	12/30/81	SCA	D007

Summary of Findings

Facility Description and Operations

OAKITE Products manufactures industrial cleaning compounds. The company has been operating for approximately 20 years on a one shift basis. When RCRA went into effect the company applied for generator and TSDF status. The company now decided to delete the TSD status and remain a generator.

The company representative designated many waste types on the application. Many of these wastes are only wastes if a spill occurred during the unloading of raw materials. Out of seven waste types five waste types are raw materials. These are

U052 - Cresols: a raw material used in making auto cleaners

U070 - 1,2 Dichlorobenzene: raw material in process

U123 - Formic Acid: raw material used in paint stripping compounds.

U134 - Hydrofloric Acid: raw material used in metal treating compounds (deoxidizing agent)

U226 - 1,1,1 trichloroethane: raw material used in product for degreasing.

Summary of Findings Page 2

Facility Description and Operations

The only two hazardous wastes generated are D000 chromium waste and D002 corrosive wastes.

As reported to me the D000 chrome waste generated was disposed of via manifest but as of 1978 the chrome waste (chromic waste solution) now was used as an intermediate. The generated D002 waste is from washing out kettles after product batches are made. Prior to disposal into the Middlesex Sewer authority the waste is placed into a 2000 gallon above ground storage tank. This tank is emptied once a month or more into the sewer. A sampling device on the discharge line has been placed on the system by the Boro of Metuchen. At any time a sample can be gathered without going inside the Oakite plant.

The secondary purpose for this inspection was to obtain information on the incident that occurred on May 24th 83. See attached Fire report

-A-

Summary of Findings Page 3

Facility Description and Operations

As reported to me this information is propriatory information and should not be part of the public information.

The incident was from a mechanical failure A mixture of sodium chloride and Sodium Hyper-chlorite was on a conveyor. The conveyor jamed and the friction from the machine created heat. The heat generated from the malfunc-ion heated up the chemicals and discharged fumes. Because of the fumes the fire Dept was called, the burned conveyor belt was delt with by the companies fire brigade.

This incident generated 700 lbs of waste. Broken down the waste was approximatly 600 lbs of sodium chloride waste and 100 lbs of Sodium Hypochlorite. The disposal method is placing the 700 lbs down the sewers into the Middlesex Sewer Authority

Summary of Findings

Facility Description and Operations

During the inspection the surrounding property was observed. I pointed out to Mr Flood several areas that needed attention. One area was under the Fuel tank feed line. I observed ground contamination under the fuel line hook up valve. I recommended to Mr Flood that this 4' x 3' area should be cleaned up. In another area I observed a tank valve leaking. The valve leaking was outside the diked area and the tank farm was for bulk storage of the companies raw materials. I recommended to Mr Flood that he should have the valve repaired before a large volume of material spilled out.

On the loading dock I observed 12 drums (55 gallon steel type) of stripper 257 in very poor integrity. Mr Flood informed me that they were probably rejected product or old inventory that's been on the loading dock for approximately a year. In addition to those 12 drums an approximate 20 more were also observed. Mr Flood stated he will find out what the companies intentions are for this material and remove these from the loading dock.

-A-

Summary of Findings Page 5

Facility Description and Operations

The company disposes of most all of their waste thru the sewer. I called Chikles Darida Plant Superintendent for Middlesex County Utilities Authority (201) 721-3800. I informed Mr. Darida of the companies practices and questioned if this procedure was acceptable to the Sewage Authority. I was informed that the sewage authority has not detected any problems that they could relate to OAKite Products. I also was informed that if any restricted substances were placed in the sewer by OAKite, by the time it went thru the lines and entered the plant it would be diluted to undetectable amounts.

I was told that Metuchen City has more jurisdiction than they do and I was referred to George Terwilliger (201) 549-8111. I was informed that the City of Metuchen is looking at Okonite's discharge regarding high B.O.D. and suspended solids. If a sample is necessary I should contact Roger Kubiak who has a key to open the sewer man hole in front of the plant.

Describe the activities that result in the generation of hazardous waste.

Between batches the company washes out the kettles. Approximatly 18 kettles are washed out that generates an alkaline wash waste. This wash waste goes into a 2000 gallon tank and then discharged into the Middlesex Sewer line.

Identify the hazardous waste located on site, and estimate the approximate quantities of each. (Identify Waste Codes)

D002 - corrosive waste approx 2000 gallons in an above ground tank.

REFERENCE NO. 13

OAKITE
EST 1906
LISTED NYSE ... OKT

PROPRIETARY CHEMICAL PRODUCTS FOR INDUSTRIAL CLEANING AND METAL TREATING

TWX 710-984-5459
TEL. (201) 464-6900

OAKITE PRODUCTS, INC.
GENERAL OFFICES: 50 VALLEY ROAD, BERKELEY HEIGHTS, N.J. 07922

Nov. 9, 1981

Permit Administration Branch
U.S. Environmental Protection Agency
26 Federal Plaza
New York, N.Y. 10278

Subject: EPA I.D. #NJ D002458776

Gentlemen:

On Nov. 13, 1980 we submitted an application for interim status with the E.P.A. for our facility located on 700 Middlesex Ave. in Metuchen, N.J.

Since that time the E.P.A. issued an exemption for facilities that treat or neutralize hazardous wastes only because the waste exhibit the corrosivity characteristic. This exemption was published in the Federal Register on Nov. 17, 1980.

Since our facility at Metuchen falls into this category of waste neutralization, we wish to withdraw our interim status permit.

Very truly yours,

John Flood

John Flood, Plant Manager

Edward H. Wallner, Vice President-Mfg.

cc: Dept. of Environmental Protection
State of N.J.
Bureau of Hazardous Waste
CNO 27
Trenton, N.J. 08625
Attn: Mr. Frank Coolick

REFERENCE NO. 14

PRELIMINARY ASSESSMENT
OFF SITE RECONNAISSANCE
INFORMATION REPORTING FORM

Date: 7-19-89

Site Name: Oakite Products Inc. TDD: 02-8906-10

Site Address: 760 Middlesex Ave
Street, Box, etc.

Metuchen
Town

Middlesex
County

New Jersey
State

NUS Personnel:

Name	Discipline
Jim Frost	Env. Science
Kayda Trujillo	Biology

Weather Conditions (clear, cloudy, rain, snow, etc.):
Humid, Hazy partly cloudy.

Estimated wind direction and wind speed: No wind direction

Estimated temperature: 80°F

Signature: Kayda Trujillo Date: 7/19/89

Countersigned: James T. Frost Date: 7/19/89

PRELIMINARY ASSESSMENT

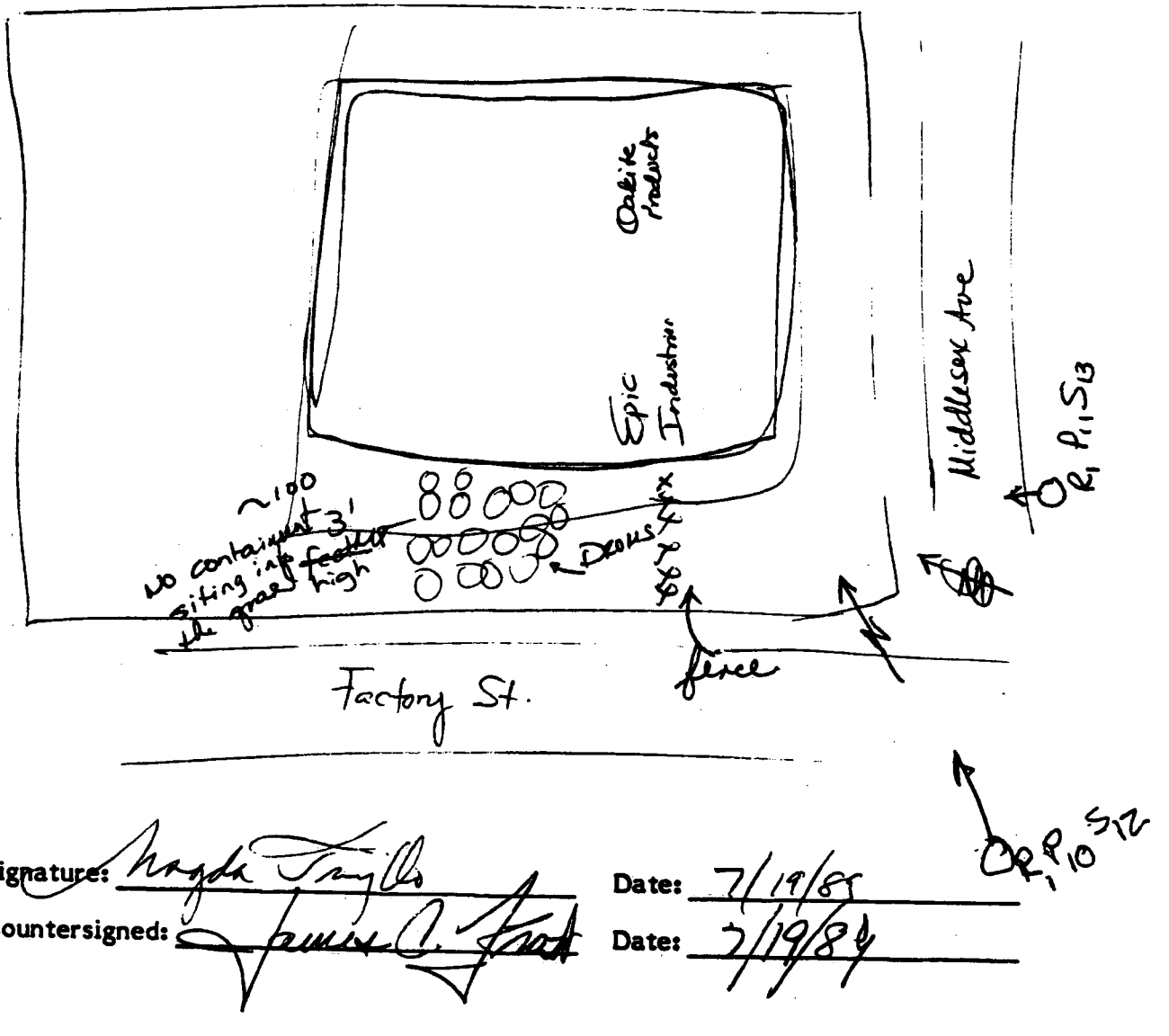
INFORMATION REPORTING FORM

Date: 7/19/89

Site Name: Oakite Products Inc. TDD: 02-8906-10

Site Sketch:

Indicate relative landmark locations (streets, buildings, streams, etc.). Provide locations from which photos are taken.



Signature: Magda Trujillo Date: 7/19/89

Countersigned: James A. Frost Date: 7/19/89

PRELIMINARY ASSESSMENT

INFORMATION REPORTING FORM

Date: 7/19/89

Site Name: Oakite Products, Inc. TDD: 02-8906-10

Notes (Periodically indicate time of entries in military time):

12:02 - Arrived at site. Building is shared with Epic Industries and no fencing is provided. Site is located at north corner of ~~Factory~~ St. and Middlesex Ave. Drums are located on the southwest side of the building complex whether they belong to Epic Industries or Oakite is unknown. The property fronts Middlesex Ave for about 300 feet and appears to be at least that deep. Loading docks are located on the front of the building with a railroad spur on the northeast side. 12:05 - The site appears to have a slight gradient of about 2%. The site is ~~soar~~ surrounded by residential area with some small businesses interspersed. The site is separated from this area

Signature: Angela Trujillo Date: 7/19/89

Countersignature: James C. Frost Date: 7/19/89

PRELIMINARY ASSESSMENT

INFORMATION REPORTING FORM

Date: 7/19/89

Site Name: Oakite, Products Inc. TDD: 02-8906-0710

Notes (Cont'd):

by trees and ~~bushes~~ shrubs on the southwest side. No apparent migration routes of Materials off site. No stressed vegetation or dead animals observed. Drums are located in a fenced area. Drums are sitting on the ground, about 100 of them. No containment of any kind. No security observed, gates are unguarded. Drums are stacked 3 high, seem to be in good conditions no spills observed or stained soil. Visibility into the site is not good. There are some storm sewers in the area in the slope of the land (intervening terrain) appear to be to the northeast parallel to Middlesex Ave. No surface waters could be seen. No unusual odors were observed. No tanks were observed. See route to hospital map for site location.
12:30 left site.

Attach additional sheets if necessary. Provide site name, TDD number, signature, and countersignature on each.

Signature: Angela Trujillo Date: 7/19/89

Countersignature: James C. Hood Date: 7/19/89

PRELIMINARY ASSESSMENT

INFORMATION REPORTING FORM

Date: 7/19/89

Site Name: Oakite Products TDD: 02-8906-10

Photolog:

Frame/Photo Number	Date	Time	Photographer	Description
R1 P10 S12	7/19/89	12:12 PM	JF	Looking north at front of building.
R1 P11 S13	7/19/89	12:21 PM	JF	Looking northwest at drum storage area.

Attach additional sheets if necessary. Provide site name, TDD number, signature, and countersignature on each.

Signature: Angela Trujillo Date: 7/19/89

Countersignature: James A. Hasl Date: 7/19/89

REFERENCE NO. 15

INVESTIGATION

CASE: #88-08-12-1346 DATE: 10-28-88 DHWM FILE: 12-10-03

INVESTIGATOR: Michael Gage TIME ARRIVED: 0900 TIME DEPARTED: 1355

LOCATION: Oakite Products, Inc. FACILITY REP.: John Granfield
ADDRESS: 700 Middlesex Avenue Quality Assurance Mgr.
Metuchen, Middlesex LOCATION TELEPHONE: (201) 549-5800
County, NJ 08846 EPA ID NUMBER: #NJD002458776

ORIGIN OF COMPLAINT: Neil Jiorle, NJDEP/ DHWM/BPA TELEPHONE: (609-) 633-2215

NATURE OF COMPLAINT: Improperly Stored Drums - Discolored Soil in Vicinity of Manufacturing Facility

PHOTOGRAPHS TAKEN: Six (6)

FINDINGS:

The purposes of this investigation were as follows:

1. Examine hazardous waste drum storage area(s) to determine compliance with Hazardous Waste Regulations (N.J.A.C. 7:26-1, 4, 7-13A, 16, 16A, 17).

2. Identify possible violations of the Spill Compensation and Control Act (N.J.S.A. 58:10-23.11c and e).

Oakite Products, Inc. (OPI) utilizes a single three story building for the manufacture of industrial cleaning compounds such as detergents, disinfectants and caustic cleaning agents. The basic operation involves mixing of solids and/or liquids to produce bulk finished products.

With the accompaniment of John Granfield (Quality Assurance Manager) I examined the building interior and surrounding outdoor areas. On the upper two floors I noted a tremendous quantity of raw and finished chemical products stored in containers ranging in size from small bottles to 250 gallon tote bins (majority were 55-gallon drums). All of the containers were stored neatly on wooden pallets which were arranged in an organized manner. Only one drum of hazardous waste was present on-site, specifically: Steel 55-gallon drum of corrosive liquid NOS (chromic acid, D007, NA #9189) with 10/24/88 accumulation start date. As documented in the attached manifests, on 10/18/88 forty-nine metal and fiberboard 55-gallon drums of hazardous wastes were transported by Chemical Management, Inc. (NYD00069949) to their facility and to Marisol, Inc. (NJD002454544) for disposal.

During my tour of the outside building areas I noted numerous areas of discolored soil which ranged in size from small drippings up to an area measuring 11' by 2'. The sources of these stains included waste oil, #2 fuel oil and fatty acids. The following is a summary of these areas of concern:

1. 11' by 2' area of odorless discolored gravel and soil in parking lot fronting southeast building (see sketch).

2. Overlying macadam was a 3' by 3' area of gravel and soil darkly discolored with semi-solid tar-like material - located adjacent to south building wall (see sketch).

3. Overlying gravel and soil was a spill of triethanol amine measuring 7' by 3' - located adjacent to south building wall (see sketch).

4. 6' by 6' discolored soil beneath fill lines of creylic acid, triethanol amine, methylene chloride and fatty acid - located alongisde southeast building wall (see sketch and photograph #1).

5. 6' by 4' darkly discolored soil beneath fill lines of petroleum distillate (RM 1844, CAS #64742-52-5), sodium silicate (RM 687, CAS #1344-09-8) and glycol (RM 80) - located alongside southeast building wall (see sketch and photograph #2).

6. 4' by 3' darkly discolored soil beneath fill lines of petroleum distillate (RM 1844, CAS #64742-52-5) and dipepentene (pine oil) (RM 27) - located alongside southeast building wall (see sketch and photograph #3).

7. 8' by 3' spill of oily clear liquid adjacent to southeast building wall.

8. Petroleum staining of containment area base for aboveground storage tanks of #2 and #4 fuel oil located near south building area (see sketch and photograph #4).

9. 2' by 2' spill of solidified petroleum product (RM #1397) which appeared black with white speckles. Located outside of diked area of aboveground storage tank near south building area (see sketch and photograph #5).

10. Unsecured steel 55-gallon drum filled with water ? surrounded by odorless darkly discolored soil - located along north building corner (see sketch and photograph #6).

11. Unsecured steel 55-gallon drum ½ filled with dark oily sludge - located alongside southeast building wall (see sketch).

Subsequent to completing my investigation I informed Mr. Granfield that his facility had violated the Spill Compensation and Control Act for allowing the discharge of hazardous substances (petroleum products) and failure to notify the Department of such discharges. I issued a Notice of Violation (NOV) addressing these violations and stating corrective measures should be completed by November 28, 1988. I recommended a New Jersey certified testing laboratory be contracted to determine if the contamination was considered hazardous under New Jersey Regulations. Subsequently these areas should be excavated to background contamination levels and the material properly disposed of.

CONCLUSIONS:

This investigation was conducted in response to a referral from the Bureau of Planning and Assessment, which indicated the facility was storing drums haphazardly and that there was stained soil in the vicinity of the manufacturing facility. During my investigation I confirmed the presence of numerous areas of discolored soil surrounding the south, southeast, and north building areas. It appeared these areas of discolored soil represented discharges of hazardous substances, primarily petroleum products. I issued a Notice of Violation for these discharges and failure to notify the Department of such discharges. The facility was instructed to excavate those areas which were contaminated with hazardous substances and then properly dispose of the material.

The report of drums being stored haphazardly was not confirmed during my investigation. This may be because all drums of hazardous waste were disposed of prior to my investigation.

RECOMMENDATIONS:

I would recommend this case by referred to the Industrial Site Evaluation Element because the facility will be undergoing an ECRA cleanup shortly.

Michael P Gage
Investigator Signature

df

DATE: OCTOBER 12, 1988

PAGE 19/20

PERSONNEL EVACUATION ROUTE

GAS MAIN LOCATIONS

ELECTRICAL CONTROL ROOM

Emergency Ass.

AREAS

OAKITE PRODUC

700 MIDDLESEX

METUCHEN, N. J.

NORTH

SCALE

DRAWN J

DATE - 1-12-

NOTE- AREAS REQUIRING

CONTROL ARE SHOWN W

CROSS HATCHING -

Indicates Evacuation Route

PROPERTY LINE & FENCE

OAKITE PRODUCTS BUILDING

OVERHEAD TANK

MAIN

MIDDLESEX AVE.

PARKING LOT

RAILROAD SIDING

DURHAM AVE.

REFERENCE NO. 16

25-34-986

Form 87

DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT
DIVISION OF WATER POLICY & SUPPLY
WELL RECORD

Permit No. _____
Application No. _____
County _____

1. Owner Murray Bldg ADDRESS 25 Penn Street
Owner's Well No. _____ SURFACE ELEVATION _____ Feet (Above mean sea level)
2. LOCATION Metuchen, New Jersey
3. DATE COMPLETED July 20, 1963 DRILLER Edward Beck Well Drilling
4. DIAMETER: top 6 Inches Bottom _____ Inches TOTAL DEPTH 102'-1" Feet
5. CASING: Type steel Diameter _____ Inches Length _____ Feet
6. SCREEN: Type _____ Size of Opening ___ Diameter _____ Inches Length _____ Feet
Range in Depth { Top _____ Feet / Bottom _____ Feet Geologic Formation _____
Tail piece: Diameter _____ Inches Length _____ Feet
7. WELL FLOWS NATURALLY 15 Gallons per Minute at _____ Feet above surface
Water rises to _____ Feet above surface
8. RECORD OF TEST: Date July 20, 1963 Yield 15 Gallons per minute
Static water level before pumping _____ Feet below surface
Pumping level 50 feet below surface after _____ hours pumping
Drawdown _____ Feet Specific Capacity _____ Gals. per min. per ft. of drawdown
How Pumped Bailed How measured _____
Observed effect on nearby wells _____
9. PERMANENT PUMPING EQUIPMENT:
Type _____ Mfrs. Name _____
Capacity _____ G.P.M. How Driven _____ H.P. _____ R.P.M. _____
Depth of Pump in well _____ Feet Depth of Footpiece in well _____ Feet
Depth of Air Line in well ___ Feet Type of Meter on Pump _____ Size ___ Inches
10. USED FOR domestic AMOUNT { Average 250 Gallons Daily / Maximum 500 Gallons Daily
11. QUALITY OF WATER Good Sample: Yes ___ No. ___
Taste good Odor none Color clear Temp. _____ °F
12. LOG _____ Are samples available? _____
(Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy)
13. SOURCE OF DATA _____
14. DATA OBTAINED BY _____ Date _____

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, ... measurements etc.)

Form GWR-1
1/80

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

Coord: 2545113

PERMIT NO. 2524[illegible]

APPLICATION NO. _____

COUNTY Middlesex

FOR IRRIGATION PURPOSES ONLY

WELL RECORD

1. OWNER METUCHEN SENIOR CITIZENS HOUSE ADDRESS 35 LINCOLN AVE.
   Owner's Well No. 1 SURFACE ELEVATION _____ Feet (Above mean sea level)
2. LOCATION Lot: 150 Block: 208 Municipality: Metuchen Boro
3. DATE COMPLETED May 3, 84 DRILLER Cooper & Hipp Well Drilling
4. DIAMETER: Top 10 Inches Bottom 6 Inches TOTAL DEPTH 330 Feet
5. CASING: Type steel Diameter 6 Inches Length 62 Feet
6. SCREEN: Type — Size of Opening — Diameter — Inches Length — Feet
   Range in Depth { Top — Feet / Bottom — Feet } Geologic Formation Red Shale
   Tail Piece: Diameter — Inches Length — Feet
7. WELL FLOWS NATURALLY — Gallons per minute at — Feet above surface
   Water rises to — Feet above surface
8. RECORD OF TEST: Date May 3, 84 Yield 25 Gallons per minute
   Static water level before pumping 25 Feet below surface
   Pumping level 120 feet below surface after 2 hours pumping
   Drawdown 95 Feet Specific Capacity — Gals. per min. per ft. of drawdown
   How pumped air lift How measured well
   Observed effect on nearby wells Unknown
9. PERMANENT PUMPING EQUIPMENT:
   Type Submersible Mfrs. Name Gould
   Capacity 30 G.P.M. How Driven elect H.P. 3 R.P.M. 3450
   Depth of Pump in well 160 Feet Depth of Footpiece in well — Feet
   Depth of Air Line in well — Feet Type of Meter on Pump — Size — Inches
10. USED FOR Irrigation AMOUNT { Average 6,000 Gallons Daily / Maximum 10,000 Gallons Daily }
11. QUALITY OF WATER Good Sample: Yes — No —
    Taste — Odor — Color — Temp. — °F.
12. LOG 0 - 30' yellow shale
    (Write details on back of sheet or on separate sheet. If electric log was made, please furnish copy.) Are samples available? —
13. SOURCE OF DATA Well Driller
14. DATA OBTAINED BY Mike Hipp Date June 11, 84

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements, etc.)

FORM 87

25-44-30

DEPARTMENT OF CONSERVATION
AND ECONOMIC DEVELOPMENT
DIVISION OF WATER POLICY & SUPPLY

Permit No. 25-6877
Application No. _____
County _____

WELL RECORD

1. OWNER U.S. PLASTIC PRODUCTS ADDRESS LAKE & WHITMAN AVES. METUCHEN
   Owner's Well No. #1 SURFACE ELEVATION 110 Feet (Above mean sea level)
2. LOCATION METUCHEN
3. DATE COMPLETED 8/15/57 DRILLER PETE CHAFITELLI
4. DIAMETER: top 6 Inches Botton 6 Inches TOTAL DEPTH 170 Feet
5. CASING: Type STANDARD BLCK Diameter 6 Inches Length 33 Feet
6. SCREEN: Type — Size of Opening _____ Diameter _____ Inches Length _____ Feet
   Range { Top _____ Feet Bottom _____ Feet Geologic Formation _____
   Tail piece. Diameter _____ Inches Length _____ Feet
7. WELL FLOWS NATURALLY — Gallons per Minute at — Feet above surface
   Water rises to — Feet above surface
8. RECORD OF TEST: Date 8/15/57 Yield 25 Gallons per minute
   Static water level before pumping 20 Feet below surface
   Pumping level 40 feet below surface after 2 hours pumping
   Drawdown 20 Feet Specific Capacity 25 Gals. per min. per ft. of drawdown 1.2
   How Pumped BAILER How measured BAILER
   Observed effect on nearby wells NONE MADE
9. PERMANENT PUMPING EQUIPMENT:
   Type NO PUMP Mfrs. Name _____
   Capacity _____ G.P.M. How Driven _____ H.P. _____ R.P.M. _____
   Depth of Pump in well _____ Feet _____ Depth of Footpiece in well _____ Feet
   Depth of Air Line in well _____ Feet _____ Depth of Meter on Pump _____
10. USED FOR COOLING MACHINERY AMOUNT Average 9600 Gallons Daily
    Maximum 12000 Gallons Daily
11. QUALITY OF WATER _____ Sample: Yes — No. —
    Taste GOOD Odor NONE Color CLEAR Temp. 58 °F
12. LOG 0-28-RED CLAY 28-170 RED SHALE Are samples available NO.
    (Give details on back of sheet or on separate sheet. If electric log was made, please furnish copy)
13. SOURCE OF DATA DRILLER
14. DATA OBTAINED BY PETE CHAFITELLI Date 8/15/57

(NOTE: Use other side of this sheet for additional information such as log of materials penetrated, analysis of the water, sketch map, sketch of special casing arrangements etc.)

REFERENCE NO. 17

Trube

MIDDLESEX COUNTY 208 AREA-WIDE

WASTE TREATMENT MANAGEMENT PLANNING

TASK 8 - GROUND-WATER ANALYSIS

A. DESCRIPTION OF GROUND-WATER SYSTEM
B. GROUND-WATER POLLUTION SOURCES

prepared by

Geraghty & Miller, Inc.
Consulting Ground-Water Geologists and Hydrologists
44 Sintsink Drive East
Port Washington, New York 11050

November 1976

This report was prepared under a subcontract of the Middlesex 208 Joint Venture in cooperation with the Middlesex County Planning Board. The work was supported by funds provided to the Middlesex County Board of Chosen Freeholders by the U. S. Environmental Protection Agency, Region II, under EPA Grant No. P002102-01-0 as authorized by the Federal Water Pollution Control Act Amendments of 1972, PL 92-500.

HYDROGEOLOGIC FRAMEWORK

The study region is underlain by consolidated and unconsolidated rocks ranging in age from Precambrian to Recent. The northwestern part of the region covering about 160 square miles falls within the Triassic Lowland physiographic region and is underlain by sedimentary and igneous rocks. To the southeast lies the Coastal Plain, a region extending over some 220 square miles. The Coastal Plain is underlain by a thick wedge of sands, gravels, clays, and silts of Cretaceous age. These deposits were laid down by rivers in a deltaic environment and generally thicken in a downdip direction. Younger sediments overlie older sediments in a southeastward direction. The stratigraphic sequence of the various rock units together with their water-bearing properties is shown on Table 1.

Major ground-water reservoirs which are also the most heavily pumped are Triassic sandstones and shales of the Brunswick Formation and the Farrington and Old Bridge Sands of Cretaceous age. Aquifers of lesser importance are the Sayreville Sand, the Englishtown Sand, and the Mount Laurel and Wenonah Sands, all of Cretaceous age and the Pensauken Formation and glacial drift deposits of Pleistocene age.

The Triassic bedrock north of the Raritan River is overlain by sediments of glacial age. East of Plainfield, these deposits consist mostly of glacial till (unsorted sand, gravel, boulders and clay),but to the west and south, permeable glacial outwash deposits are present. The aquifers extend beyond the confines of the study region; the Triassic aquifer northward into Union County and westward across the Millstone River into Somerset County,and the

Table 1 - Geologic Units and Their Ground-Water Potential in the Middlesex 208 Area.

System	Unit	Lithologic description	Thickness (feet)	Water-bearing characteristics
Quaternary	Alluvium	Silt, sand and mud	0 - 50	Relatively impermeable; no importance as source of water.
	Eolian deposits	Sand dunes	0 - 40	Of no importance as source of water as mostly unsaturated.
	Stratified drift	Sand, gravel	0 - 60	Permeable and locally an important water source north of Raritan River.
	Non-stratified drift (till)	Clay, boulders, gravel, sand, silt	0 - 150	Of no importance as source of water Absorbs precipitation and supplies recharge to underlying Triassic aquif
	Cape May Formation	Fine- to medium-grained quartz sand and some fine gravel	0 - 50	May fill pre-Cape May stream channels and overlies portions of Triassic and Old Bridge aquifers. Locally exploited for domestic wells.
	Pensauken Formation	Clayey sand and gravel	0 - 70	Overlies portions of coastal plain and Triassic aquifers. Locally tappe by domestic wells that yield 50 to 100 gpm.
Cretaceous	Mount Laurel and Wenonah Sands	Micaceous sand	50	Lower portion of sand crops out alon southern Middlesex County border. Locally important aquifer.
	Marshalltown Formation	Micaceous, sandy clay	40	Confining bed.
	Englishtown Sand	Micaceous, fine- to medium-grained sand, some clay lenses	100	Present in limited area along southeastern Middlesex. Locally importa as water source. Presently not deve oped.
	Woodbury Clay	Black, micaceous clay	50	Major confining zone to underlying aquifers.
	Merchantville Clay	Black, micaceous clay with glauconite	50 - 60	

Table 1 - (Continued)

System	Unit	Lithologic description	Thickness (feet)	Water-bearing characteristics
Cretaceous	Magothy Formation	Fine lignitic sand and black clay	90 - 130	Not important as aquifer. Well yie are low but sufficient for domestic purposes.
	Amboy Stoneware Clay	Gray to black clay with carbonaceous material	0 - 30	Considered to be lower facies of Ma thy Formation. Confining bed.
	Old Bridge Sand	Fine- to coarse-grained white to yellow sand	20 - 110	Major aquifer tapped by many wells Median specific capacity is 20 gpm/ Transmissivity range 140,000 to 230,000 gpd/ft. Artificially rechar in places. Well yields 200 to 1,000 gpm.
	South Amboy Fire Clay	Varicolored clay	0 - 35	Confining bed.
	Sayreville Sand	Fine, white micaceous sand	0 - 40	Not continuous. Unimportant as aquifer.
	Woodbridge Clay	Gray clay and clayey sand	50 - 100	Major confining bed overlying Far-rington Sand.
	Farrington Sand	Gray to yellow fine- to medium-grained sand. Contains some clay layers.	30 - 150	Major aquifer tapped by many wells Median specific capacity is 29 gpm/ Transmissivity range 50,000 to 150,000 gpd/ft. Well yields 500 to 2,000 gpm.
	Raritan Fire Clay	Varicolored basal clay	0 - 90	Confining bed.
Triassic	Brunswick Formation (Newark Group)	Red shale interbedded with siltstone and sand-stone	5,000+	Major aquifer north of Raritan River Specific capacity is 0.1 to 25 gpm/ft Transmissivity range 1,000 to 4,00 gpd/ft. Well yields 50 to 700 gpm.
	Lockatong Formation (Newark Group)	Hard shale and argillite	1,000+	Present only in small areas. Of little importance as aquifers.
	Stockton Formation (Newark Group)	Conglomerate and sandstone	1,000+	

Table 1 - (Continued)

System	Unit	Lithologic description	Thickness (feet)	Water-bearing characteristics
Triassic	Diabase and basalt	Dense crystalline rock	500	Unimportant aquifer because of low permeability and hardness. Acts as confining bed. Well yields 0 to 10 gpm.
Precambrian	Gneiss and schist	Metamorphic crystalline rocks	5,000+	Present at depth below Coastal Plain. Of no importance as aquifer; not tapped by wells.

EXPLANATION OF ABBREVIATIONS AND SYMBOLS ON GEOLOGIC MAPS AND HYDROGEOLOGIC CROSS SECTIONS

GEOLOGIC DATA

Q QUATERNARY		Qal	ALLUVIUM	
		Qe	WINDBLOWN DEPOSITS	
		Qsd	STRATIFIED DRIFT	
		Qtm	TERMINAL MORAINE	
		Qt	TILL	
	Qp	Qcm	CAPE MAY FM.	PLEISTOCENE
		Qps	PENSAUKEN FM.	
		Qsw	SWAMP DEPOSITS	
K CRETACEOUS		Kmw	MOUNT LAUREL AND WENONAH SANDS	
		Kmt	MARSHALLTOWN FM.	
		Ket	ENGLISHTOWN SAND	
		Kwb	WOODBURY CLAY	
		Kmv	MERCHANTVILLE CLAY	
		Km	MAGOTHY FM. (including Kas - AMBOY STONEWARE CLAY)	
	Kru	Kob	OLD BRIDGE SAND	RARITAN FM.
		Ksa	SOUTH AMBOY FIRE CLAY	
		Ks	SAYREVILLE SAND	
		Kwc	WOODBRIDGE CLAY	
		Kf	FARRINGTON SAND	
		Krf	RARITAN FIRE CLAY	
TRIASSIC	Tr n	Tr b	BRUNSWICK SHALE	NEWARK GROUP
		Tr l	LOCKATONG FM.	
		Tr s	STOCKTON FM.	
		Tr db	DIABASE	
		Tr bs	BASALT	
pЄ PRECAMBRIAN			GNEISS AND SCHIST	

Plate I. PRE-QUATERNARY GEOLOGY AND LINES OF SECTIONS

This map shows the outcrop pattern of the geologic units with the Quaternary age formations removed and the lines of six hydrogeologic sections constructed to illustrate subsurface conditions. During Quaternary time much of the study area was blanketed with glacial deposits and stream alluvium, obscuring the stratigraphic relationships of the underlying formations. On this map the Quaternary (Pleistocene and Recent deposits) are not shown so that the areal distribution and stratigraphic relations of the underlying formations can be better understood.

The study area lies within two major physiographic provinces, the Triassic Lowland and the Coastal Plain. The heavy dashed line that roughly bisects the county and runs from southwest to northeast along Devils Brook, Farrington Lake, and Route 1 north of the Raritan River is known as the Fall Line and represents the northern and landward limit of the Coastal Plain physiographic province. The region north of this line is part of the Triassic Lowland province.

The Triassic Lowland is underlain by bedrock of Triassic age called the Newark Group. Included in this group are the Brunswick, Lockatong, and Stockton Formations consisting of shale, argillite, and sandstone, respectively. Also included within this group are igneous basalt flows of the Watchung Mountains and diabase intrusions.

The Newark Group continues southeast of the Fall Line, but is covered by a thick sequence of Coastal Plain deposits and so is not shown on the map. The Coastal Plain is underlain by a southeasterly dipping and thickening sequence of unconsolidated sand, gravel, clay,

and silt of Cretaceous age. Each Coastal Plain formation shown has a southwest to northeast strike and dips to the southeast. Moving downdip across the Coastal Plain from the Fall Line, the outcrop belts of successively younger geologic formations are crossed. This means that as each formation becomes overlain by younger and younger formations, it lies at progressively greater depths below land surface. For instance, the Old Bridge Sand (part of the Raritan Formation) crops out near Duhernal Lake, but about four miles to the southeast near the county border, the Old Bridge Sand is overlain by four younger formations.

Northwest of the Fall Line are three outliers of undifferentiated Raritan sediments which probably represent erosional remnants of a formerly more extensive Coastal Plain.

The geologic units shown on Plate 1 were taken from the State of New Jersey's Bureau of Geology and Topography geologic overlay sheets 25, 26, 28 and 29, Special Report 8 [1] and the Geologic Map of New Jersey. [8]

tained by subtracting the depths to the Farrington Sand reported in unpublished and published drillers' and geologists' logs from the land surface elevations. Available geophysical logs were interpreted and also proved useful in establishing the structural position of the sand.

The control points indicating the surface of the Farrington are not evenly distributed. Most data points are in the South Amboy-Runyon-Jamesburg region. Only a few control points are present further east and southeast. A 50-foot contour interval was used in mapping the surface of the Farrington. Elevations of the Farrington are in good overall agreement and, although the control points are limited in number, a fairly smooth upper surface of the Farrington is indicated.

Plate 9. CONTOURS ON THE UPPER SURFACE OF FARRINGTON SAND.

The map shows the outcrop areas of the Farrington Sand, one of the two principal unconsolidated aquifers, and its extension beneath the Coastal Plain. The contour lines show the elevation with reference to mean sea level of the upper surface of the sand.

Subsequent to deposition of the Farrington Sand, the Raritan River cut a deep channel across the outcrop and as a result the Farrington is divided into two separate parts. North of the Raritan River the sand is referred to as "Farrington Sand (North)" and south of the Raritan River it is commonly referred to as "Farrington Sand (South)." In some places a thin section of the Farrington Sand (North) appears to extend below the Raritan River southward but the degree of connection with the main sand, both geologically and hydrologically, is not known precisely.

The surface of the Farrington Sand ranges in elevation from about 50 to 100 feet above sea level in the outcrop area to about 400 feet below sea level in the southern part of Middlesex County along the Monmouth County line. In most of the outcrop areas, the Farrington Sand is covered by Pleistocene and Recent deposits which makes it difficult to exactly define the extent of the exposed area. As indicated by the contour lines, the surface of the Farrington Sand declines in a southeasterly direction at a rate of approximately 50 feet per mile. In the patterned area, the sand is at the surface but along the eastern border of the county the depth to the Farrington generally ranges from 400 to 500 feet below the land surface.

About 85 control points were used to draw the contour lines. These data were ob-

PLATE 1

PRE-QUATERNARY GEOLOGY AND LINES OF SECTION

MIDDLESEX 208

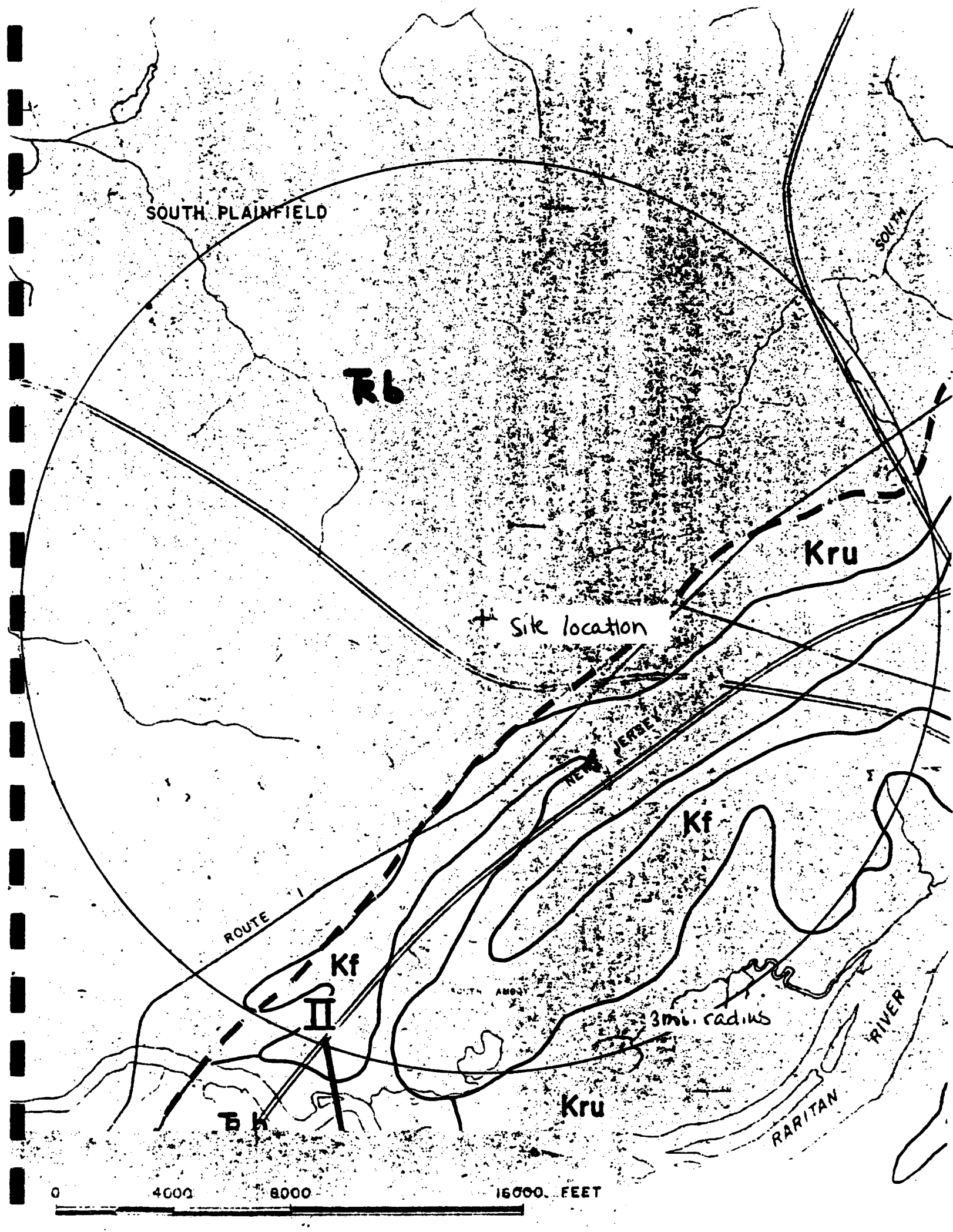
LEGEND

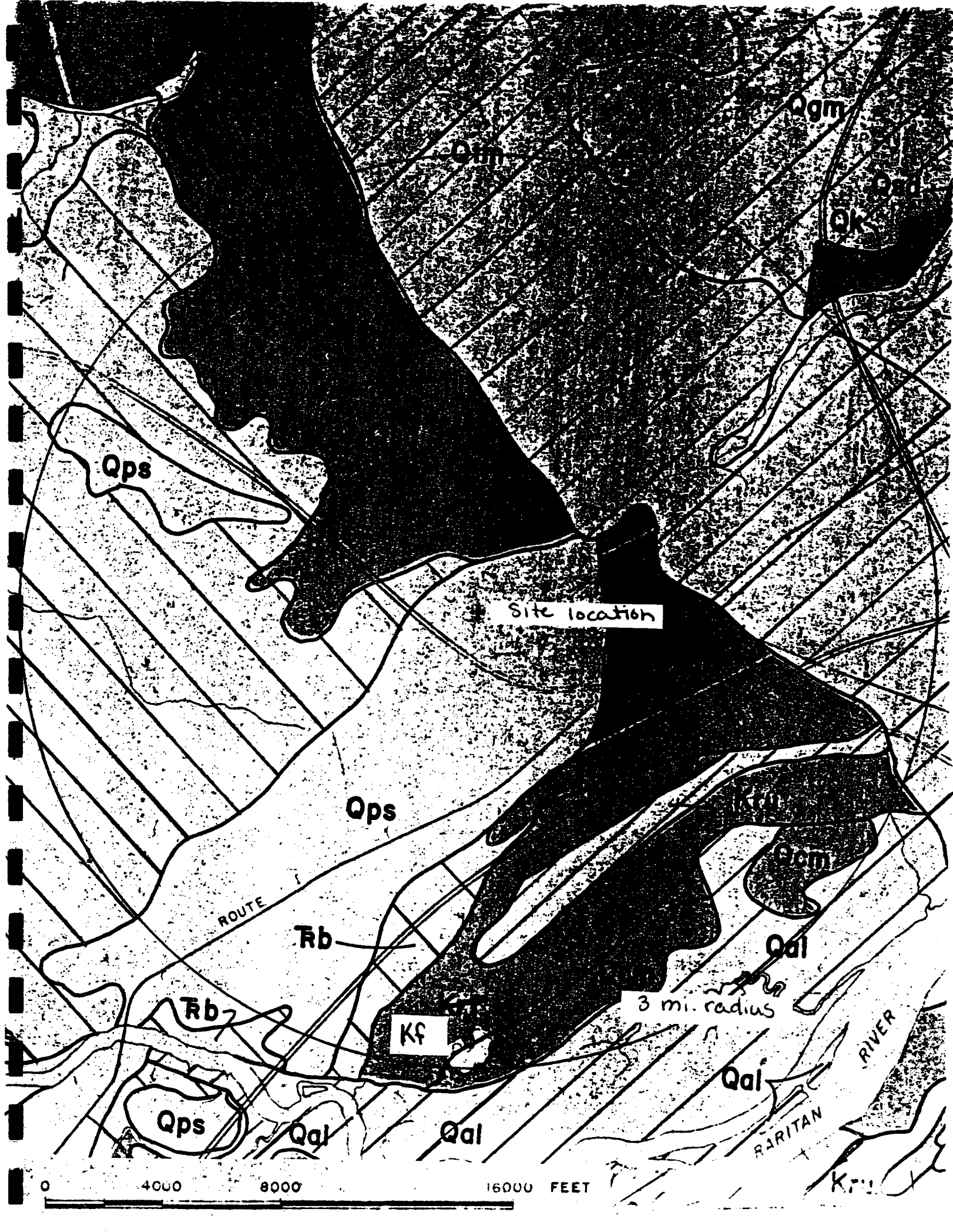
CRETACEOUS	Kmw	MOUNT LAUREL AND WENONAH SANDS
	Kmt	MARSHALLTOWN FORMATION
	Kel	ENGLISHTOWN SAND
	Kwb	WOODBURY CLAY
	Kmr	MERCHANTVILLE CLAY
	Km	MAGOTHY
	Kob	OLD BRIDGE SAND
	Kf	FARRINGTON SAND
	Kru	RARITAN FORMATION UNDIVIDED
TRIASSIC	Trb	BRUNSWICK SHALE — NEWARK GROUP
	Trl	LOCKATONG FORMATION — NEWARK GROUP
	Trs	STOCKTON FORMATION — NEWARK GROUP
	Trdb	DIABASE
	Trbs	BASALT

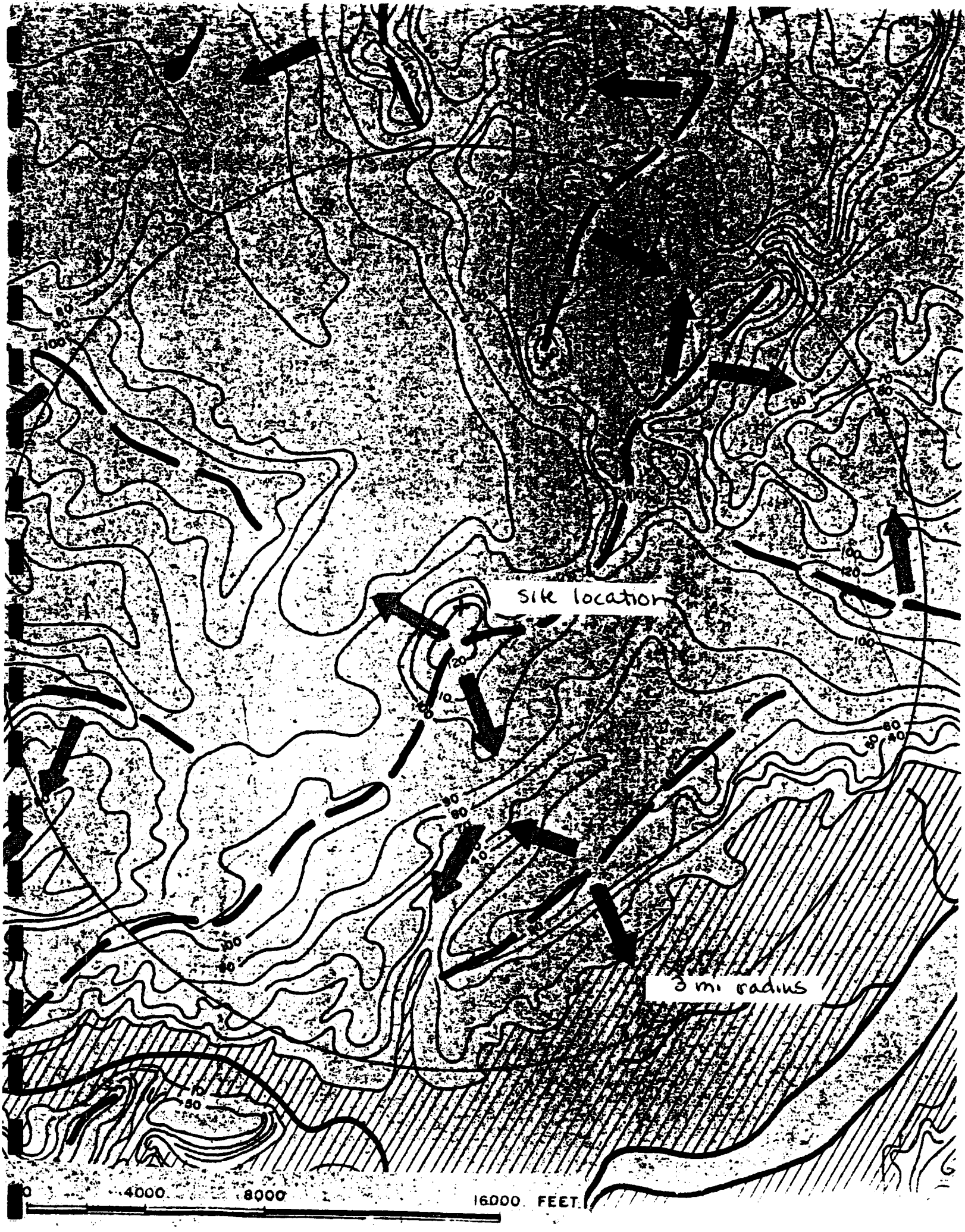
BOUNDARY OF PROJECT AREA

II —— II LINE OF HYDROGEOLOGIC SECTION (SEE PLATES 2 THROUGH 7)

FALL LINE


SOUTH PLAINFIELD
SOUTH
Trb
Kru
Site location
NEW JERSEY
Kf
ROUTE
Kf
II
3mi. radius
Kru
Trk
RARITAN
RIVER
0
4000
8000
16000 FEET


Qgm
Qtm
Qad
Qk
Qps
Site location
Qps
Qcm
ROUTE
Trb
Qal
3 mi. radius
Trb
Kf
Qal
RIVER
Qps
Qal
Qal
RARITAN
0
4000
8000
16000 FEET


site location
3 mi radius
0
4000
8000
16000 FEET

REFERENCE NO. 18

Wer Div.
Trube

water resources water resources water resou rces water resources water resources water re sources water resources water resources wat er resources water resources water resources wa ter resources water resources water resou rces water resources water resources water re

Policies and Practices for Managing Middlesex County's Groundwater Resources

water resources water resources water resou rces water resources water resources water re sources water resources water resources wat er resources water resources water resource s water resources water resources water res

middlesex county planning board, n.j.

POLICIES AND PRACTICES FOR MANAGING MIDDLESEX COUNTY'S GROUNDWATER RESOURCES

PREPARED BY THE
ENVIRONMENTAL SYSTEMS SECTION
MIDDLESEX COUNTY PLANNING BOARD
NEW BRUNSWICK, N.J.
SEPTEMBER 1974

TEXT REVISED AND REPRINTED
JANUARY 1979

this study an attempt has been made to evaluate and summarize the geologic characteristics of the rocks as they relate to their water carrying and water producing capacity.

C. Quarternary System

1. Wisconsin Drift

The Wisconsin Drift was deposited by the last four continental ice sheets of the Pliestoncene Age which covered large portions of the northern United States. It forms a nearly continuous mantle over the underlying Triassic and Cretaceous rocks in the northeastern part of Middlesex County. The southern limit reached by the Wisconsin glacier in Middlesex County is roughly along a line from Plainfield to Metuchen and over to the mouth of the Raritan River at Perth Amboy.[8] The Wisconsin Drift is of importance from a water supply standpoint primarily because some portions are permeable enough to absorb water directly from precipitation and transmit it readily into underlying beds.

The outwash plain found between Metuchen, Plainfield and east Bound Brook covers an estimated 16 square miles and consists of layers of sand and gravel which together are called stratified drift. The stratified drift is approximately 10 to 60 feet thick on the eastern edge near the moraine. In general the stratified drift is quite permeable but it is too shallow and covers too small an area to be in itself an important water supply source. However, it holds water which percolates into the underlying Brunswick formation and has increased the yield of many wells located on the drift.[9]

2. Cape May Formation

The Cape May formation is a pinkish-yellow fine to medium grained quartz sand forming a thin mantle 3 to 10 feet thick over the Cretaceous formation in the South River valley as well as along the south shore of the Raritan River.

The average porosity of the Cape May formation is 43% and the average specific yield is 38%. The coefficient of permeability ranges between 180 to 900 with a weighted average of 450. A block of Cape May Sand one square mile in area and one foot thick is capable of storing approximately 80 million gallons of water.[10]

The important hydrologic feature of the Cape May formation is that it overlies the Old Bridge Sand aquifer and increases its recharge capacity. No major water supplies are drawn directly from the Cape May formation at the present time.

3. Pensauken Formation

In the southern portion of Middlesex County most of the hills and upland areas (above 60 feet elevation) are covered with a layer of yellow to brown, clayey sand and gravel known as the Pensauken formation. The largest

area is between the Lawrence Brook and South River extending southwest to Cranbury. The Pensauken formation in this area is of importance in that it covers the truncated sand members of the Raritan formation.

The Pensauken formation ranges in thickness to 70 feet with the average porosity and specific yield estimated to be 40% and 30% respectively. The coefficient of permeability is considerably less than the Cape May formation, ranging between 120 and 200 and averages approximately 170. A block of the Pensauken formation 1 square mile in area and 1 foot thick could store an estimated 64 million gallons of available water.

No large water supplies have been developed from the Pensauken formation however it does yield small supplies of water to a large number of wells for domestic and farm use. Its importance from an hydrologic standpoint is in that it readily absorbs water from precipitation and transmits it to underlying aquifers resulting in an increase in the effective recharge area. Much of the intake area of the Farrington Sand and a portion of the intake area of the Old Bridge Sand is overlain by the Pensauken formation.

D. Cretaceous System

1. Englishtown Sand

The Englishtown Sand occurs near the southeastern border of the County and is a fine to medium-grained white or yellow sand which is occasionally micaceous, lignitic and limonitic. The Englishtown Sand in Middlesex County is approximately 100 feet thick and is overlain by the relatively impermeable Marshalltown formation.

Physical properties of the formation vary widely. The weighted average coefficient of permeability is 525 with the average porosity 44% and specific yield 30%. On the basis of the physical properties and the performance of wells tapping this resource in Monmouth County, the Englishtown Sand is in all probability the third most productive Coastal Plain in Middlesex County. At the present time however, no large water supplies have been developed from this formation in Middlesex County because of its relatively remote location from population and industrial centers. It should be noted that the Englishtown Sand is the second major source of water supply to Monmouth County. A number of wells in this formation yield more than 0.5 mgd. It is possible to develop a water supply of approximately 5.0 million gallons per day from this source in the County.11

2. Magothy-Raritan Formations

Although the Magothy and Raritan formation are distinct geologic units, they are frequently in direct hydraulic contact and are considered part of the same aquifer system. Northeast of Jamesburg, the Raritan formation has been divided into seven members, three of which are water bearing. Even though it is possible to divide the Raritan formation into seven distinct

members, attempts to trace recognized units in the outcrop areas, both along the strike and downdip, have been only moderately successful.[12] Hydrogeologic characteristics of units in Raritan formation have been summarized in Table 4.

3. Magothy Formation

The Magothy formation lies immediately above the Raritan formation and is separated from the Old Bridge Sand member by the Amboy Stoneware Clay. Average porosity of the Magothy formation is 46% and specific yield is approximately 41%. The coefficient of permeability ranges between 60 and 925 with a weighted average of 296. A block of Magothy formation one square mile in area and one foot thick can store 85 million gallons of water.

While the Magothy formation is capable of storing large quantities of water it does not transmit it freely due to its low coefficient of permeability. At the present time no significant supply of water is drawn from this formation although numerous wells for domestic and agricultural uses draw water from this source. Due to its low permeability and transmissivity, successful development of large capacity wells in the Magothy formation would be difficult if not impossible to accomplish.

4. Old Bridge Sand

The Old Bridge Sand member of the Raritan formation is the most productive and intensely developed aquifer in Middlesex County. It outcrops or is exposed beneath permeable Pliestocene deposits in an irregular band that extends from Raritan Bay near South Amboy to and probably beyond Jamesburg. It has an intake area of approximately 25 square miles, a thickness of 80 to 110 feet and dips gently to the southeast at 40 to 45 feet per mile.

The Old Bridge Sand is well sorted and is composed of fairly fine to coarse sand or fine gravel. The average porosity of the Old Bridge Sand is estimated to be 42% and specific yield is 40%. The coefficient of permeability ranges between 1000 and 1500. The Old Bridge Sand is capable of storing and transmitting large quantities of water; for example, a block of Old Bridge Sand one square mile in area and one foot thick would store about 84 million gallons of available water. The sand can transmit approximately 1 mgd for each square mile of aquifer.[13]

5. Farrington Sand

The Farrington Sand outcrops in a contiguous band nearly a mile wide along the southeast edge of Farrington Lake in East Brunswick. It has a total outcrop area of approximately 22.3 square miles, of which 10.9 square miles lie south of the Raritan River and 11.4 square mile lie north. The effective recharge area of the Farrington Sand is 16.9 square miles and has an average thickness of 80 feet, dipping gently to the southeast at the rate of 45 to 55 feet per mile.

The Farrington Sand is a medium to coarse grained sand with an average porosity estimated at 34% and specific yield 32%. The coefficient of permeability ranges between 210 and 3500 with a weighted average between 1,200 and 1,500. The Farrington Sand is also capable of storing and transmitting large quantities of water. A block of the Farrington Sand one square mile in area and 1 foot in thickness would be capable of storing almost 67 million gallons of available water. It can transmit more than 2.5 mgd for each square mile of aquifer.[14]

E. Triassic System

1. Newark Group

The rocks of the Newark Group are the third most important aquifer in the County (behind the Old Bridge Sand and Farrington Sand) because of their areal extent and large amount of water developed from them. The oldest is the Stockton formation consisting of conglomerate and sandstone interbedded with red shale. Next oldest is the Locatong formation consisting of hard shale and argullite. The two rocks are found in a small area near the southwestern border of the County. The Brunswick formation is a red shale interbedded with siltstone and occassional layers of sandstone and covers the entire area north of a line between Carteret and Plainsboro.

These formations are rather impermeable except along numerous cracks which traverse the beds at high angles to the bedding. Some water may flow along the bedding planes but such movements are limited. These rocks dip to the northwest at angles ranging from 5o to 15o

The fact that these rocks are usually fine grained, relatively impermeable and are water bearing by virtue of their cracks and crevices, introduces problems in any attempt to appraise their water bearing capacity. The permeability and specific yield of the Newark Group depends upon the degree of cracking. Since the degree of cracking decreases with the depth, the permeability and specific yield also decreases with the depth. The cracks in the rocks of the Newark Group intersect one another at many angles; the result being that water can move almost in any direction. Figure 3 shows the area of the Brunswick formation covered with permeable material to a thickness of 40 to 45 feet.

The coefficient of transmissibility of the Brunswick Shale is approximately 25,000 (as compared to 96,000 for the Farrington Sand and 108,000 for the Old Bridge Sand) and the storage coefficient is approximately 0.0044.[15] This means that Farrington and Old Bridge Sands can transmit four times as much water as the rocks of Newark Group under a given hydraulic head and through a given width of section. The difference in the capacity of the Newark Group to store water is even more striking. For one square mile area and 300 feet of saturated thickness Newark Group rocks would hold only 275 million gallons of water. By comparison 80 feet of the Farrington Sand would hold 5,360 million gallons of water for the same area. The low storage capacity explains the high rate of run-off and low ground water flows observed in streams draining areas underlain by Newark Group formations where there is no permeable cover material.

TABLE 4

HYDROGEOLOGIC CHARACTERISTICS OF UN OF THE RARITAN FORMATION - MIDDLESEX COUNTY

Unit	Lithologic Description	Physical Properties: Average Porosity (percent by volume)	Physical Properties: Permeability[1]	Remarks
Amboy Stoneware Clay	Light-gray to nearly black clay; abundant carbonaceous materials; locally has mottled red appearance; in some places gray to black sandy clay; Lignitic. Thickness to 30 feet.	-	-	An aquiclude[2]
Old Bridge Sand	White to light-yellow, fine to medium grained, occasionally coarse grained, slightly micaceous sand; locally contains thin, irregular clay beds. Thickness 80 to 110 feet. Dips southeast 40 to 45 feet per mile.	40	1000 - 1500	Most productive aquifer in the Raritan Formation and the County. Effective intake area is 33 square miles.
South Amboy Fire Clay	Varicolored light-gray, white or brick-red clay; locally sandy. Thickness to 35 feet.	-	-	An aquiclude
Sayreville Sand	Layers of fine white micaceous sand, fine to coarse grained white sand, with or without clay and arkosic sand beds. Usually thin and lacks continuity. Thickness to 40 feet.	44	30 - 500	Owing to thinness and lack of continuity, this sand member is unimportant as an aquifer. So far as known, no wells in this area draw water entirely from this aquifer.
Woodbridge Clay	Dark-gray clay to sandy clay and clayey sands. The basal part is varicolored white, light-gray, and brick-red compact clay. Thickness 50 to 100 feet.	-	-	An aquiclude
Farrington Sand	Light-gray or light-yellow, fine to medium grained sand grading into coarse arkosic sand sprinkled with small pebbles and gravel in the lower part. This sand is commonly divided by clay layers into two or more parts. Thickness 35 to 135 feet. Dips southeast 55 feet per mile.	34	1200 - 1500	Second in importance as a productive aquifer to the Old Bridge Sand. Total intake area is 17 square miles.
Raritan Fire Clay	Varicolored blue, grown, gray or red clay. Basic component has brick-red color. Thickness to 90 feet.	-	-	An aquiclude

Note: Summarized from "The Groundwater Supplies of Middlesex County, N.J." Henry C. Barksdale, et. al., State Water Policy Commission, Special Report No. 8., 1943.

[1]Coefficient of permeability is the rate of flow of water in gallons per day through a cross sectional area of one square foot under a hydraulic gradient of 100% at the prevailing temperature.

[2]A geologic formation, although porous and capable of absorbing water slowly, will not transmit it fast enough to furnish an appreciable supply for a well or a spring.

REFERENCE NO. 19

Studies of the Early Mesozoic Basins of the Eastern United States

ALBERT J. FROELICH and GILPIN R. ROBINSON, Jr., editors

A summary of current research on early Mesozoic sedimentary and igneous rocks and related mineral resources and studies of geophysics, structure, and tectonics of the basins of the Eastern United States

U.S. GEOLOGICAL SURVEY BULLETIN 1776

STRATIGRAPHIC FRAMEWORK AND DISTRIBUTION OF EARLY MESOZOIC ROCKS OF THE NORTHERN NEWARK BASIN, NEW JERSEY AND NEW YORK

R.A. Parker, H.F. Houghton,[1] and R.C. McDowell

Abstract

Sedimentary rocks below the Early Jurassic Orange Mountain Basalt in the Newark basin in New Jersey and New York are divided into three formations: the Stockton and Lockatong Formations of Late Triassic age and the overlying Passaic Formation (herein adopted) of Late Triassic and Early Jurassic age. Field mapping in the northern part of the basin has shown that dark-gray shale and siltstone of the Lockatong Formation tongue out into arkosic sandstone of the upper Stockton. The Passaic Formation can be subdivided into four informal, mappable lithofacies units, largely on the basis of their stratigraphic position, areal distribution, color, and grain size. Paleocurrent indicators and the distribution of lithofacies in the Passaic suggest a strongly south-southwest-oriented axial paleoflow in the northern Newark basin. The composition and areal distribution of the stratigraphic units in the basin should prove useful in deciphering the geologic history of the area.

INTRODUCTION

Sedimentary rocks below the Orange Mountain Basalt (the first Watchung Basalt of earlier workers) in the northern Newark basin in New Jersey and New York are subdivided into three formations of early Mesozoic age: arkosic sandstone and red siltstone and sandstone of the Stockton Formation, cycles of gray and black argillite and siltstone of the Lockatong Formation, and red-brown mudstone, siltstone, sandstone, and conglomerate of the Passaic Formation (table 1). Existing geologic maps show various interpretations of stratigraphic relations among the three formations in the northern part of the Newark basin. Difficulties are encountered where criteria used to establish boundaries between the formations elsewhere in the basin are applied in the northern part because of lateral changes in the formations and interfingering. A number of maps and measured sections (U.S. Geological Survey, 1967; Savage, 1968; Sanders, 1974; Olsen, 1980a) indicate that the Passaic Formation (herein adopted; lower part of the Brunswick Formation of earlier workers) becomes significantly coarser grained northward, and north of the pinchout of the Lockatong, the Passaic directly overlies the Stockton. Field work for this study was initiated with three principal objectives: (1) to examine stratigraphic relations among these early Mesozoic formations, (2) to determine whether the lithologic subdivision of the Passaic Formation used by Savage (1967, 1968) in Rockland County, New York, could be extended southward into New Jersey, and (3) to ascertain whether gray siltstones in the Passaic Formation in the central part of the basin could be traced into the northern part.

Our mapping in the northern part of Newark basin has shown Stockton lithology both above and below the Lockatong Formation and has confirmed that the Lockatong Formation intertongues with the Stockton Formation near their intrusion by the Palisade Diabase as noted by Van Houten (1969, p. 342) and later demonstrated by Olsen (1980c) (fig. 1). The Passaic Formation has been shown to directly overlie the Stockton Formation everywhere in the mapped area and has been divided into four lithologic units somewhat modified from those of Savage (1968) (fig. 1).

The geologic map (fig. 1) shows what we consider to be mappable units within the early Mesozoic rocks of the northern Newark basin, on the basis of the results of previous workers and our own field observations and examination of core samples and logs. Positions of lithologic contacts are interpretive in many places not only because of the gradational nature of the contacts but also because of extensive glacial or urban cover.

STRATIGRAPHIC UNITS

Stockton Formation

At the composite type section on the Delaware River, the Stockton Formation is approximately 1,500 m thick (McLaughlin, 1959). The dominant lithologies are gray and buff-colored arkose and arkosic conglomerate and red siltstone and arkosic sandstone. The formation generally is more fine grained near the top, and the proportion of red shale and siltstone is greater. The top of the Stockton is placed at the base of the lowest continuous black siltstone unit of the overlying Lockatong Formation (Olsen, 1980c). In the northern Newark basin the Stockton sequence below the Lockatong thins to less than 250 m (Olsen, 1980c). Examination of approximately 62 ft of core from 11 different holes in the Secaucus, New Jersey, area indicated that Stockton-like lithology occurs in stratigraphic positions as much as 300 m above the Lockatong Formation. The total core consisted of about 64 percent white to tan arkose, 27 percent

[1]New Jersey Geological Survey, CN 029, Trenton, NJ 08625.

REFERENCE NO. 20

ERP No. D-MMS-A02224-00, Rating EO2, 1989 Central and Western Planning Areas Gulf of Mexico Outer Continental Shelf (OCS) Oil and Gas Sales No. 118 and 122, Lease Offerings offshore the coast of Alabama, Mississippi, Louisiana and Texas.

Summary

EPA expressed objections to the proposed action of unrestricted leasing in the Central and Western Gulf. EPA also expressed concern over the lack of any proposed mitigation for possible impacts to deep-water benthic communities. EPA also expressed concern that ozone modeling of the effect of offshore emission on onshore air quality be conducted.

ERP No. D-NPS-K61095-NV, Rating LO, Death Valley National Monument, General Management Plan, Implementation, Inyo and San Bernardino Counties, CA and Nye and Esmeralda Counties, NV.

Summary

EPA expressed a lack of objections to the proposed management plan but noted that future multiple use activities (mining, campgrounds) will require an assessment of air quality, surface water and ground water impacts.

Final EISs

ERP No. F-COE-H30000-IA, Des Moines Recreational River and Greenbelt Area, Development, Operation and Maintenance, Des Moines River, Webster, Hamilton, Boone, Dallas, Polk, and Warren Counties, IA.

Summary

EPA has no objections to this project with the understanding that each unit of the project will be evaluated separately for NEPA compliance at a later date.

ERP No. F-FHW-F40280-WI, WI-TH-83 Improvement, I-94 to Cardinal Lane/WI-TH-16, Funding and 404 Permit, Waukesha County, WI.

Summary

EPA has no objection to this project, long as a minimum of 0.8 acre of additional wetlands are created.

(Note: The above summary should have appeared in the 6-10-88 Federal Register Notice.)

ERP No. F-USN-C85041-NJ, Colts Neck, Naval Weapons Station Earle Family Housing Development, Construction, Mammouth County, NJ.

Summary

EPA's concern regarding the location of the mitigation site has been addressed in this document. In addition, information within the document clarified our questions with respect to the delineation of wetlands, and the point of discharge of the wastewater treatment plant. Accordingly, EPA has no unresolved concerns regarding the implementation of the project as proposed.

ERP No. F-USN-D84005-VA, Empress II Operation, Electromagnetic Pulse, Radiation Environment Simulator for Ships, Chesapeake Bay (West of Bloodsworth Island) and Atlantic Ocean (Virginia Capes Operating Area), off the Coast of VA.

Summary

EPA expressed a preference for the proposed site and requested a thorough monitoring program for the project.

(Note: The above summary should have appeared in the 6-17-88 Federal Register Notice.)

Dated: June 21, 1988.

William D. Dickerson,

Deputy Director, Office of Federal Activities.

[FR Doc. 88-14353 Filed 6-23-88; 8:45 am]

BILLING CODE 6560-50-M

[ER-FRL-3404-3]

Environmental Impact Statements; Availability; Weekly Receipts

Responsible Agency: Office of Federal Activities, General Information (202) 382-5073 or (202) 382-5075. Availability of Environmental Impact Statements, Filed June 13, 1988 Through June 17, 1988. Pursuant to 40 CFR 1506.9.

EIS No. 880188, Draft, BLM, AZ, San Pedro River Riparian Resource Management Plan, Implementation, San Simon Resource Area, Safford District, Cochise County, AZ, Due: September 21, 1988, Contact: Jerrold Coolidge (602) 428-4040.

EIS No. 880190, Draft, DOE, ND, Charlie Creek-Belfield 345 kV Transmission Line Project, Construction, Operation and Maintenance, Implementation, Billings, Stark, McKenzie and Dunn Counties, ND, Due: August 8, 1988, Contact: James D. Davis (406) 657-5525.

EIS No. 880191, Draft, SCS, MD, East Yellow Creek Watershed, Soil Erosion and Flood Damage Reduction Plan, Funding and Implementation, Sullivan, Linn and Charlton Counties, MO, Due: August 8, 1988, Contact: Russell C. Mills (314) 875-5214.

EIS No. 880192, Draft, NPS, AK, Denali National Park and Preserve, Wilderness Recommendations, Designation or Nondesignation, AK, Due: August 29, 1988, Contact: Linda Nebel (907) 257-2654.

EIS No. 880193, Draft, AFS, WY, Little Bighorn River, Wild and Scenic River Study, National Wild and Scenic Rivers System, Designation, Bighorn National Forest, Sheridan County, WY, Due: September 22, 1988, Contact: Arthur Bauer (307) 672-6751.

EIS No. 880194, Draft, USN, PA, U.S. Navy Girard Point Site, Sale to the Philadelphia Muncipal Authority for the Establishment of a Steam Generation Facility that Produces Steam for Purchase by the U.S. Navy, City of Philadelphia, PA, Due: August 12, 1988, Contact: Kenneth Petrone (215) 897-6431.

EIS No. 880195, Final, FHW, PA, PA-23/New Holland Avenue/LR-1124, Section 801 Relocation, US 30 to Walnut and Chestnut Streets, Funding and 404 Permit, Manheim, East Lampeter and Lancaster Townships and the City of Lancaster, Lancaster County, PA, Due: July 25, 1988, Contact: Philibert A. Quellet (717) 782-4422.

EIS No. 880196, Draft, FRC, REG, Regulations Governing Independent Power Producers (RM88-4-000) and Regulations Governing Bidding Programs (RM88-8-000), Implementation, Due: August 15, 1988, Contact: Gilda Rodriquez (202) 357-8155.

EIS No. 880197, Draft, SCS, MS, Whites Creek, Watershed Protection and Flood Prevention Plan, Funding, Possible 404 Permit and Implementation, Webster County, MS, Due: August 8, 1988, Contact: L. Peter Heard (601) 965-5205.

EIS No. 880198, Draft, EPA, FL, CF Mining Complex II, Open Pit Phosphate Mine and Beneficiation Plan, Construction and Operation, NPDES and 404 Permits, Hardee County, FL, Due: August 8, 1988, Contact: Maryann Gerber (404) 347-3776.

Dated: June 21, 1988.

William D. Dickerson,

Deputy Director, Office of Federal Activities.

[FR Doc. 88-14352 Filed 6-23-88; 8:45 am]

BILLING CODE 6560-50-M

[FRL-3349-F]

[redacted]

AGENCY: U.S. Environmental Protection Agency.

ACTION: Notice.

SUMMARY: Notice is hereby given that, pursuant to section 1424(e) of the Safe Drinking Water Act, the Administrator of the U.S. Environmental Protection Agency (EPA) has determined that the

New Jersey Coastal Plain Aquifer System, underlying the New Jersey Coastal Plan Area, is the sole or principal source of drinking water for the Counties of Monmouth, Burlington, Ocean, Camden, Gloucester, Atlantic, Salem, Cumberland, Cape May and portions of Mercer and Middlesex Counties, New Jersey, and that the acquifer, if contaminated, would create a significant hazard to public health. As a result of this action EPA will review Federally-assisted projects (projects which receive Federal financial assistance through a grant, contract, loan guarantee, or otherwise) proposed for construction in a project review area which includes the New Jersey Coastal Plain Area and a portion of the aquifer streamflow source zone. The streamflow source zone includes upstream portions of the Delaware River Basin in the States of Delaware, New Jersey, New York and Pennsylvania. Federally-assisted projects will be reviewed to ensure that they are designed and constructed so that they do not create a significant hazard to public health. Projects outside of the project review area but within the streamflow source zone will be reviewed if they require an Environmental Impact Statement (EIS).

DATES: This determination shall be promulgated for purposes of judicial review at 1:00 P.M. Eastern Time on July 7, 1988. This determination shall become effective on August 8, 1988.

ADDRESSES: The data on which these findings are based, detailed maps of the New Jersey Coastal Plain Area and the project review area, a compilation of public comments and the Agency's response to those comments, are available to the public and may be inspected during normal business hours at the U.S. Environmental Protection Agency, Water Management Division, 26 Federal Plaza, New York, New York 10278. In addition, copies of a map showing the designated area and a responsiveness summary to public comment are available upon request.

FOR FURTHER INFORMATION CONTACT: John Malleck, Chief, Office of Ground Water Management, Water Management Division, 26 Federal Plaza, New York, New York 10278 (212) 264-5635.

SUPPLEMENTARY INFORMATION: Notice is hereby given that pursuant to section 1424(e) of the Safe Drinking Water Act (42 U.S.C., 300f, 300h-3(e), Pub. L. 93-523), the Administrator of the U.S. Environmental Protection Agency (EPA) has determined that the New Jersey Coastal Plain Aquifer System, underlying the New Jersey Coastal Plain Area, is the sole or principal source of drinking water for the Counties of Monmouth, Burlington, Ocean, Camden, Gloucester, Atlantic, Salem, Cumberland, Cape May and portions of Mercer and Middlesex Counties, New Jersey. Pursuant to section 1424(e), Federally-assisted projects proposed for construction in the New Jersey Coastal Plain Area and the project review area within portions of its streamflow source zone will be subject to EPA review. The streamflow source zone for the New Jersey Coastal Plain Aquifer System includes upstream portions of the Delaware River Basin in the States of Delaware (New Castle County), New Jersey (Mercer-part, Hunterdon-part, Sussex-part, and Warren Counties), New York (Delaware, Orange, Sullivan and Ulster Counties), and Pennsylvania (Berks-part, Bucks, Carbon-part, Chester-part, Delaware, Lackawanna-part, Lancaster, Lehigh, Luzerne-part, Monroe Montgomery, Northampton, Philadelphia, Pike, Schuykill and Wayne Counties). The project review area includes that portion of the streamflow source zone which lies within two miles of the Delaware River in the States of New Jersey (in Mercer, Hunterdon, Sussex and Warren Counties), Delaware (in New Castle County), Pennsylvania (in Delaware, Philadelphia, Bucks, Monroe, Northampton, Pike and Wayne Counties) and New York (in Delaware, Orange and Sullivan Counties).

I. Background

Section 1424(e) of the Safe Drinking Water Act states: (e) If the Administrator determines, on his own initiative or upon petition, that an area has an aquifer which is the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health, he shall publish notice of that determination in the Federal Register. After the publication of any such notice no commitment for Federal financial assistance (through a grant, contract, loan guarantee, or otherwise) may be entered into for any project which the Administrator determines may contaminate such aquifer through a recharge zone so as to create a significant hazard to public health, but a commitment for Federal financial assistance may, if authorized under another provision of law, be entered into to a plan or design the project to assure that it will not so contaminate the aquifer.

On December 4, 1978 the Environmental Defense Fund, Inc. and the Sierra Club New Jersey Chapter petitioned the EPA Administrator to determine that the Counties of Monmouth, Burlington, Ocean, Camden, Gloucester, Atlantic, Salem, Cumberland, Cape May and portions of Mercer and Middlesex Counties, New Jersey, constitute an area whose aquifer system is "the sole or principal drinking water source for the area and which, if contaminated, would create a significant hazard to public health." On March 21, 1979, EPA published the petition in the Federal Register. Public hearings on the petition request were held May 1, 15 and 17, 1979 in Lindenwold, Trenton, Freehold and Pomona, New Jersey. A May 19, 1983 Federal Register notice announced the availability of additional technical information and the extension of public comment period to July 15, 1983.

II. Basis for Determination

Among the factors to be considered by the Administrator in connection with the designation of an area under section 1424(e) are:

(1) Whether the aquifer is the area's sole or principal source of drinking water and (2) whether contamination of the aquifer would create a significant hazard to public health.

On the basis of information available to this Agency, the Administrator has made the following findings, which are the basis for the determination noted above:

(1) The New Jersey Coastal Plain Area depends upon the underlying Coastal Plain Aquifer System for seventy-five (75) per cent or more of its drinking water to serve 3 million people.

(2) Data show that the formations of the New Jersey Coastal Plain Area are hydrologically interconnected such that they respond collectively as an interrelated aquifer system.

(3) If the aquifer system were to become contaminated, exposure of the persons served by the system would constitute a significant hazard to public health.

(4) Alternative supplies capable of providing fifty (50) per cent or more of the drinking water to the designated area are not available at similar economic costs.

The New Jersey Coastal Plain Aquifer System is highly susceptible to contamination through its recharge zone from a number of sources, including but not limited to, chemical spills, leachate from landfills, stormwater runoff, highway de-icing, faulty septic systems wastewater treatment systems and waste disposal lagoons. The aquifer is also susceptible to contamination to a lesser degree from the same sources, through its streamflow source zone. Since ground-water contamination can be difficult or impossible to reverse

completely and since the aquifer in this area is solely or principally relied upon for drinking water purposes by the population of the New Jersey Coastal Plain Area, contamination of the aquifer could pose a significant hazard to public health.

III. Description of the New Jersey Coastal Plain Area Aquifer System, Its Recharge Zone and Its Streamflow Source Zone

The New Jersey Coastal Plain Aquifer System consists of a wedge-shaped mass of unconsolidated sediments composed of clay, silt, sand and gravel. The wedge thins to a feathered edge along the Fall Line and attains a thickness of over 6,000 feet at the tip of Cape May County, New Jersey.

These sediments range in age from Cretaceous to Holocene and can be classified as continental, coastal or marine deposits. There are five major aquifers within the Coastal Plain Aquifer System. They are the Potomac-Raritan-Magothy Aquifer System, Englishtown Aquifer, Wenonah-Mount Laurel Aquifer, Kirkwood Aquifer and the Cohansey Aquifer. Natural recharge to the New Jersey Coastal Plain Aquifer System occurs primarily through direct precipitation on the outcrop area of the geologic formations. A smaller component of natural recharge to the deeper layers of the system occurs by vertical leakage from the upper layers. This accounts for a small percentage of the total amount of recharge; however, over a large area and a long period of time the amount of water transmitted can be significant.

The New Jersey Coastal Plain Aquifer discharges to the surface through streams, springs and evapotranspiration. Many streams ultimately flow into bays or directly into the ocean. Development of the ground-water reservoir as a water supply source constitutes another discharge component which today accounts for a significant portion of discharge from the overall system. In certain areas (e.g. along the Delaware River) heavy pumping has caused a reversal in the normal discharge from the aquifer (Raritan-Magothy) such that the surface stream (Delaware River) now recharges the aquifer. This phenomenon implies that, in addition to the New Jersey Coastal Plain Area, the Delaware River Basin within Delaware, New Jersey, Pennsylvania and New York must be regarded as a streamflow source zone (an upstream headwaters area which drains into a recharge zone), which flows into the Coastal Plain Area.

IV. Information Utilized in Determination

The information utilized in this determination includes the petition, written and verbal comments submitted by the public, and various technical publications. The above data are available to the public and may be inspected during normal business hours at the U.S. Environmental Protection Agency, Region II, Water Management Division, 26 Federal Plaza, New York, New York 10278.

V. Project Review

When the EPA Administrator publishes his determination for a sole or principal drinking water source, no commitment for Federal financial assistance may be may if the Administrator finds that the Federally-assisted project may contaminate the aquifer through a recharge zone so as to create a significant hazard to public health . . . Safe Drinking Water Act section 1424(e), 42 U.S.C. 300h-3(e). In many cases, these Federally-assisted projects would also be analyzed in an "Environmental Impact Statement" (EIS) under the National Environmental Policy Act (NEPA), 42 U.S.C. 4332(2)(C). All EISs, as well as any other proposed Federal actions affecting an EPA program or responsibility, are required by Federal law (under the so-called "NEPA/309" process) [1] to be reviewed and commented upon by the EPA Administrator. Therefore, in order to streamline EPA's review of the possible environmental impacts on designated aquifers, when an action is analyzed in an EIS, the two reviews will be consolidated, and both authorities will be cited. The EPA review (under the Safe Drinking Water Act) of Federally-assisted projects potentially affecting sole or principal source aquifers, will be included in the EPA review (under the "NEPA/309" process) of any EIS accompanying the same Federally-assisted project. The letter transmitting EPA's comments on the final EIS to the lead agency will be the vehicle for informing the lead agency of EPA's actions under section 1424(e).

All Federally-assisted proposed projects will be reviewed, within the New Jersey Coastal Plain Area (Counties of Monmouth, Burlington, Ocean, Camden, Gloucester, Atlantic, Salem, Cumberland and Cape May, and portions of Mercer and Middlesex Counties, New Jersey (as delineated on maps included in the petition), and that portion of the streamflow source zone which lies within two miles of the Delaware River in the States of New Jersey (in Mercer, Hunterdon, Sussex and Warren Counties), Delaware (in New Castle County), Pennsylvania (in Delaware, Philadelphia, Bucks, Monroe, Northampton, Pike and Wayne Counties) and New York (in Delaware, Orange and Sullivan Counties) (as delineated on maps included in the public record). Outside the New Jersey Coastal Plain Area and further than two miles from the Delaware River in the streamflow source zone, only those Federally-assisted proposed projects requiring the preparation of an EIS will be reviewed. The Agency has chosen a two-mile limit for the project review area along the Delaware River based on the climate and hydrologic setting of the area. The two-mile distance is consistent with the two-mile review radius included in the EPA guidelines for Ground-Water Classification and is protective of human health.

VI. Summary and Discussion of Public Comments

There has been much controversy over the possible designation of this aquifer system. The majority of the comments from the original 1979 public hearings were in direct opposition to such a designation. More than half of all responses received were against designation. Several commenters felt constrained by the original comment period and thereby requested an extension. EPA complied with this request on two occasions, once by announcing at the four public hearings it held throughout the area under consideration that the agency had extended the formal comment period from May 14, 1979, to December 31, 1979, and again in a May 19, 1983 Federal Register Notice that announced the availability of additional information and extension of the public comment period to July 15, 1983. Although a number of ground-water protection measures are available at the Federal, State and local level, none of these, either individually or collectively, permit EPA to act as directly as would a sole source aquifer designation in the review and approval of Federally-assisted projects. In addition, EPA feels that the sole source project review process will foster integration rather than duplication of environmental review efforts. Memoranda of Understanding have been negotiated with various Federal agencies with the purpose of streamlining the review process and minimizing project delays. Most of the commenters expressed concern that a

[1] 42 U.S.C. § 7609 requires EPA to conduct this review. The "309" in a "NEPA/309" derives from the original source of this general requirement: Section 309 of the Clean Air Act.

designation would be a duplication of efforts already existing on the state and local levels. Some commenters felt that a sole source aquifer designation would give EPA the power to reject any applications for Federally-funded projects indiscriminately and to delay any project underway. Another main concern of many commenters was that a designation would cause a strong negative economic impact on the area in question and curtail needed development, thus eliminating jobs. EPA is sympathetic to the concerns of the commenters; however, the Agency feels that a sole source aquifer designation would not interfere with economic development. Federal financial assistance will be withheld only in those instances where it is determined that a proposed project may contaminate the aquifer so as to create a significant hazard to public health and no acceptable remedial measures are available to prevent the potential hazard.

Dated: June 16, 1988.

Lee M. Thomas,

Administrator.

[FR Doc. 88-14283 Filed 6-23-88; 8:45 am]

BILLING CODE 6560-50-M

[OPTS-59845; FRL-3404-5]

Toxic and Hazardous Substances; Certain Chemicals Premanufacture Notices

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: Section 5(a)(1) of the Toxic Substances Control Act (TSCA) requires any person who intends to manufacture or import a new chemical substance to submit a premanufacture notice (PMN) to EPA at least 90 days before manufacture or import commences. Statutory requirements for section 5(a)(1) premanufacture notices are discussed in the final rule published in the Federal Register of May 13, 1983 (48 FR 21722). In the Federal Register of November 11, 1984 (49 FR 46066) (40 CFR 723.250), EPA published a rule which granted a limited exemption from certain PMN requirements for certain types of polymers. Notices for such polymers are reviewed by EPA within 21 days of receipt. This notice announces receipt of nine such PMNs and provides a summary of each.

DATES: Close of Review Periods:

Y 88-192, 88-193—June 5, 1988.
Y 88-194—June 7, 1988.
Y 88-195—May 17, 1988.
Y 88-196—June 8, 1988.
Y 88-197—June 14, 1988.
Y 88-198—June 16, 1988.
Y 88-199—June 10, 1988.
Y 88-200—June 23, 1988.

FOR FURTHER INFORMATION CONTACT: Stephanie Roan, Premanufacture Notice Management Branch, Chemical Control Division (TS-794), Office of Toxic Substances, Environmental Protection Agency, Rm. E-611, 401 M Street SW., Washington, DC 20460 (202) 382-3725.

SUPPLEMENTARY INFORMATION: The following notice contains information extracted from the non-confidential version of the submission provided by the manufacturer on the PMNs received by EPA. The complete non-confidential document is available in the Public Reading Room NE-G004 at the above address between 8:00 a.m. and 4:00 p.m. Monday through Friday, excluding legal holidays.

Y 88-192

Manufacturer. Confidential.
Chemical. (G) Hydroxy function acrylic resin.
Use/Production. (S) Coatings. Prod. range: Confidential.

Y 88-193

Manufacturer. Confidential.
Chemical. (G) Polyurethane resin.
Use/Production. (S) Coating. Prod. range: Confidential.

Y 88-194

Manufacturer. Sybron Chemicals Inc.
Chemical. (G) Copolymer of aliphatic esters of 2-propenoic acid with homocyclic and heterocyclic aromatic vinyl compounds, reaction production wiyh aliphatic polyam ne.
Use/Production. (G) Waste and process water purification. Prod. range: Confidential.

Y 88-195

Manufacturer. Confidential.
Chemical. (G) Dibasic acid polyol polyester.
Use/Production. (G) Used in coatings. Prod. range: Confidential.

Y 88-196

Manufacturer. Confidential.
Chemical. (S) Rosin, dicyclopentadiene, dimer fatty acid polymer.
Use/Production. (S) Printing ink vehicles. Prod. range: 3,000,000-3,700,000 kg/yr.

Y 88-197

Manufacturer. Reichhold Chemicals, Inc.
Chemical. (G) Sunflower oil alkyd.
Use/Production. (S) Architectural trade sales coating. Prod. range: Confidential.

Y 88-198

Manufacturer. Confidential.
Chemical. (G) Aliphatic polyester urethane.
Use/Production. (G) Coatings. Prod. range: Confidential.

Y 88-199

Manufacturer. C.J. Osborn.
Chemical. (G) Polyester.
Use/Production. (S) Pigmented and clear finish. Prod. range: Confidential.

Y 88-200

Manufacturer. Confidential.
Chemical. (G) Styrene/acrylic copolymer.
Use/Production. Coatings and inks. Prod. range: Confidential.

Date: June 13, 1988.

Steve Newburg-Rinn,

Acting Chief, Public Data Branch, Information Management Division, Office of Toxic Substances.

[FR Doc. 88-14282 Filed 6-23-88; 8:45 am]

BILLING CODE 6560-50-M

FEDERAL COMMUNICATIONS COMMISSION

Public Information Collection Requirement Submitted to Office of Management and Budget for Review

June 16, 1988.

The Federal Communications Commission has submitted the following information collection requirement to OMB for review and clearance under the Paperwork Reduction Act of 1980 (44 U.S.C. 3507).

Copies of this submission may be purchased from the Commission's copy contractor, International Transcription Service, (202) 857-3800, 2100 M Street NW., Suite 140, Washington, DC 20037. For further information on this submission contact Judy Boley, Federal Communications Commission, (202) 632-7513. Persons wishing to comment on this information collection should contact Yvette Flynn, Office of Management and Budget, Room 3235 NEOB, Washington, DC 20503, (202) 395-3785.

OMB Number: 3060-0025.
Title: Application for Restricted Radiotelephone Operator Permit—Limited Use.
Form Number: FCC 753.
Action: Revision.
Respondents: Individuals or households.

REFERENCE NO. 21

Uncontrolled Hazardous Waste Site Ranking System

A Users Manual
(HW-10)

Originally Published in
the July 16, 1982, *Federal Register*

United States
Environmental Protection
Agency

1984

TABLE 2

PERMEABILITY OF GEOLOGIC MATERIALS*

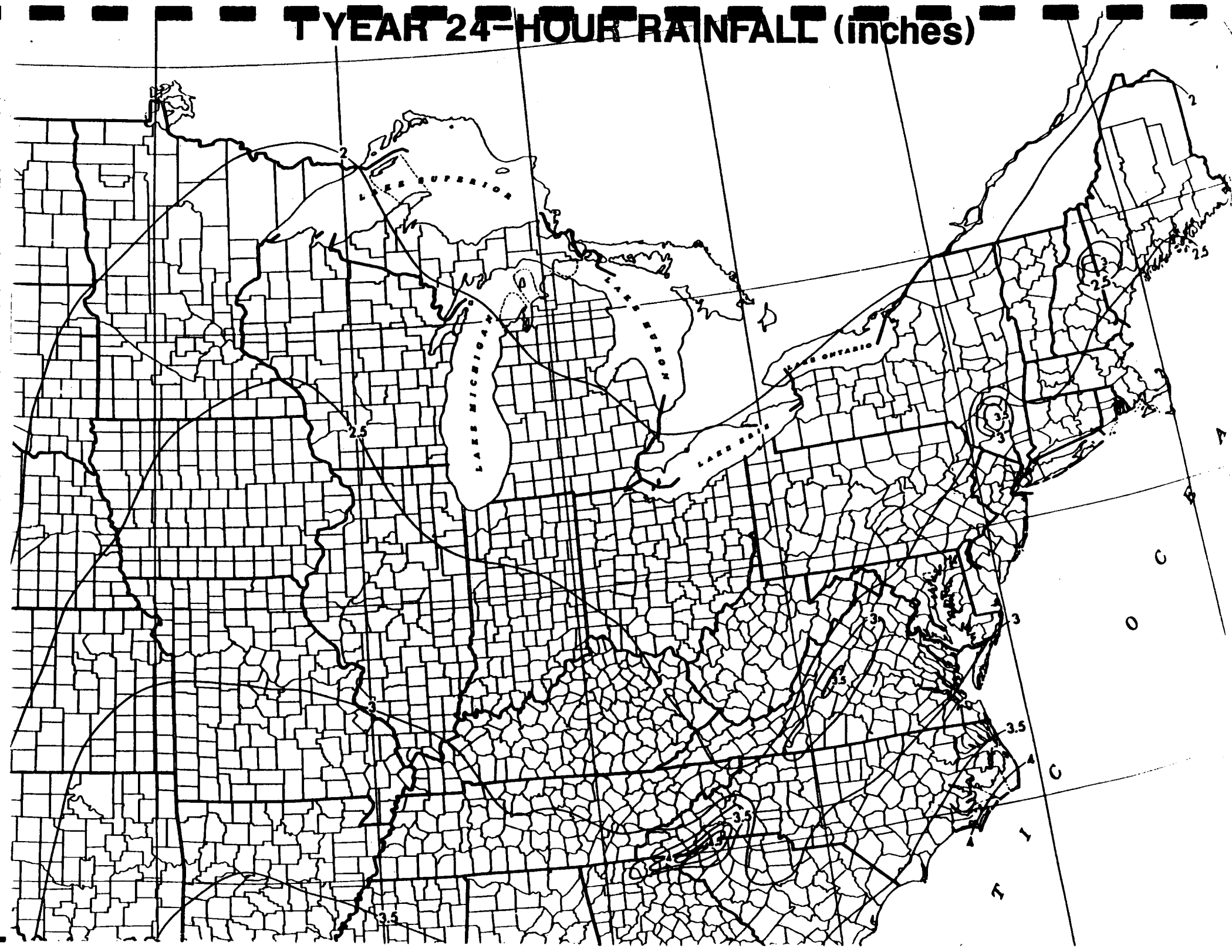
Type of Material	Approximate Range of Hydraulic Conductivity	Assigned Value
Clay, compact till, shale; unfractured metamorphic and igneous rocks	$<10^{-7}$ cm/sec	0
Silt, loess, silty clays, silty loams, clay loams; less permeable limestone, dolomites, and sandstone; moderately permeable till	$10^{-5} - 10^{-7}$ cm/sec	1
Fine sand and silty sand; sandy loams; loamy sands; moderately permeable limestone, dolomites, and sandstone (no karst); moderately fractured igneous and metamorphic rocks, some coarse till	$10^{-3} - 10^{-5}$ cm/sec	2
Gravel, sand; highly fractured igneous and metamorphic rocks; permeable basalt and lavas; karst limestone and dolomite	$>10^{-3}$ cm/sec	3

*Derived from:

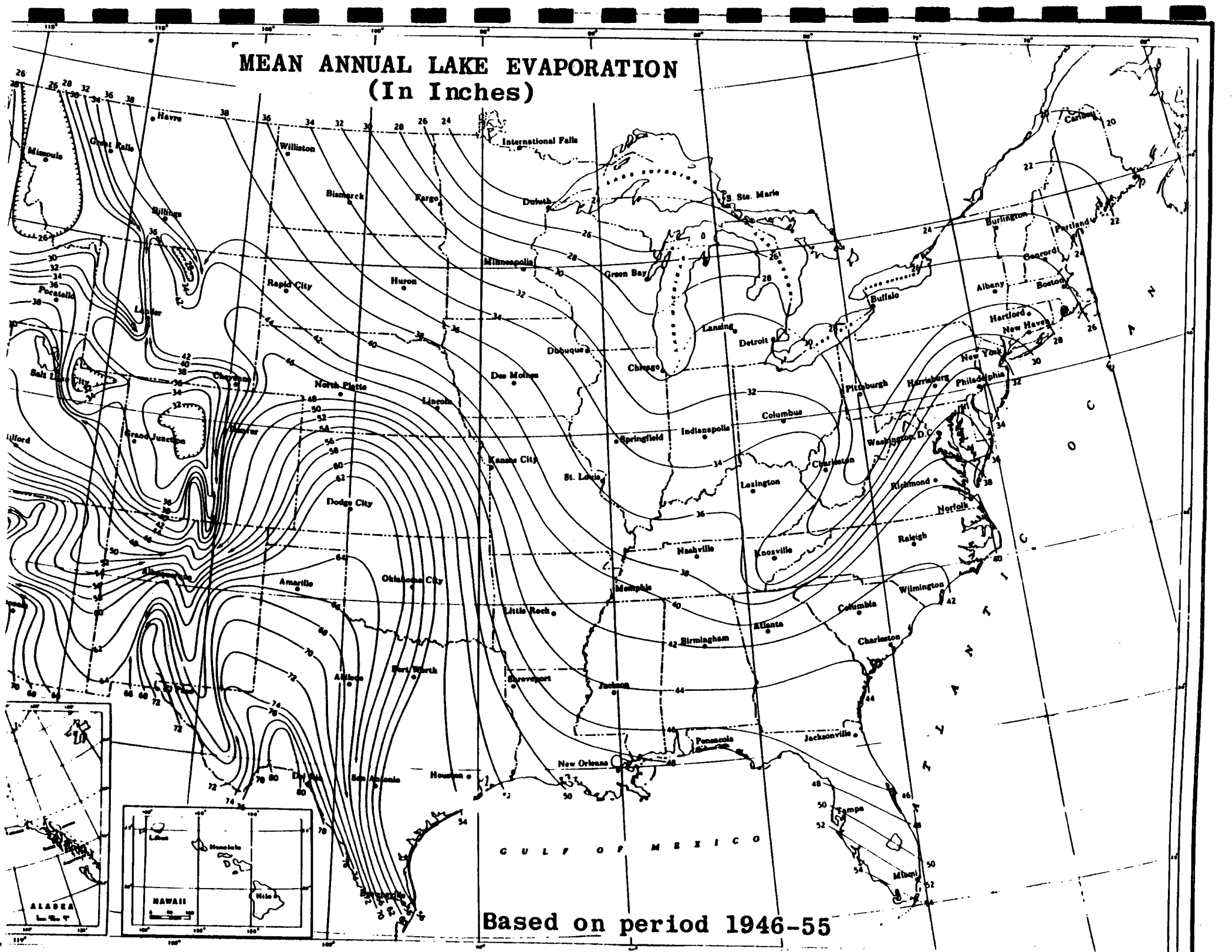
Davis, S. N., Porosity and Permeability of Natural Materials in Flow-Through Porous Media, R.J.M. DeWest ed., Academic Press, New York, 1969

Freeze, R.A. and J.A. Cherry, Groundwater, Prentice-Hall, Inc., New York, 1979

TYEAR 24-HOUR RAINFALL (inches)

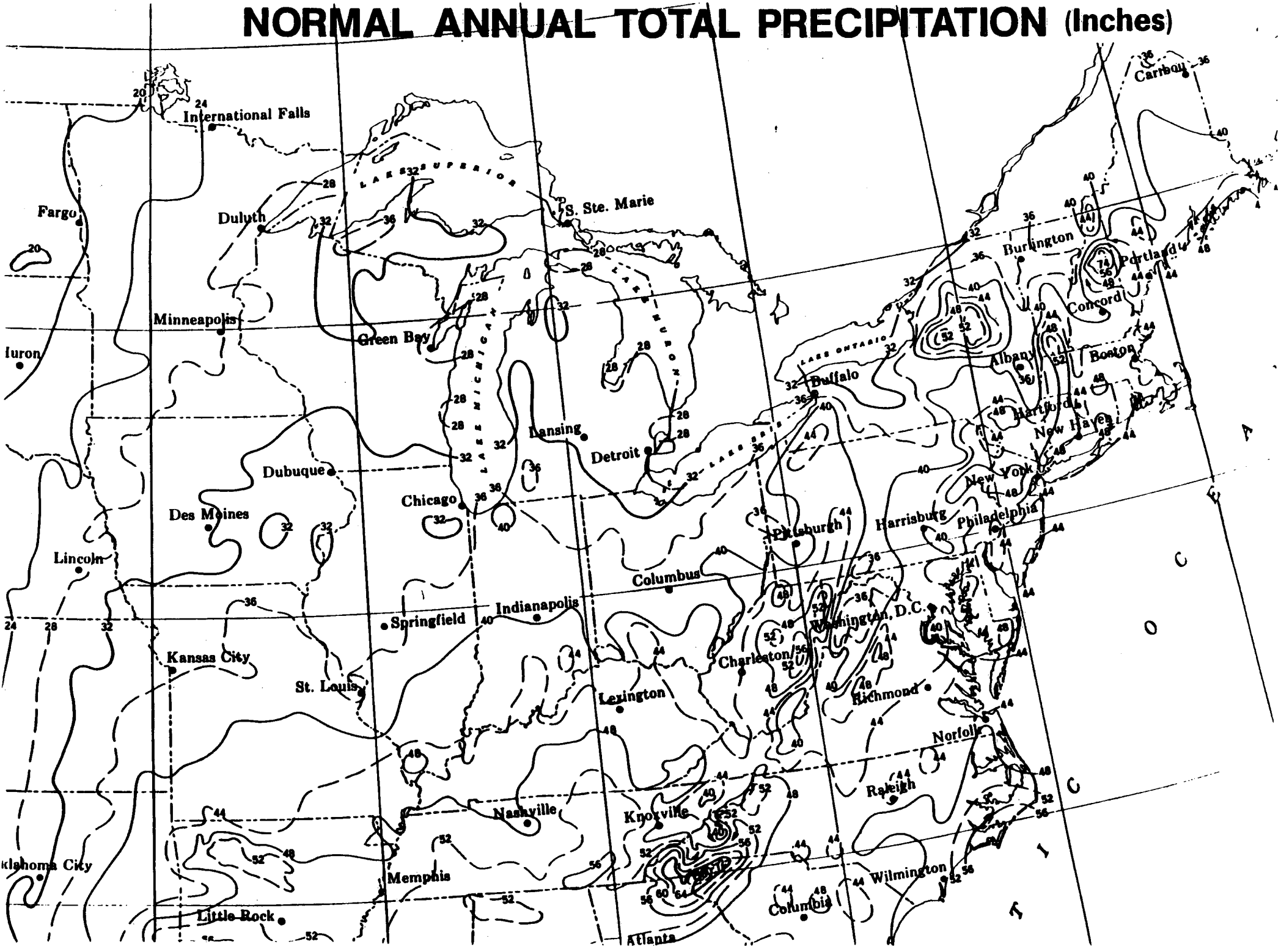


MEAN ANNUAL LAKE EVAPORATION
(In Inches)



Based on period 1946-55

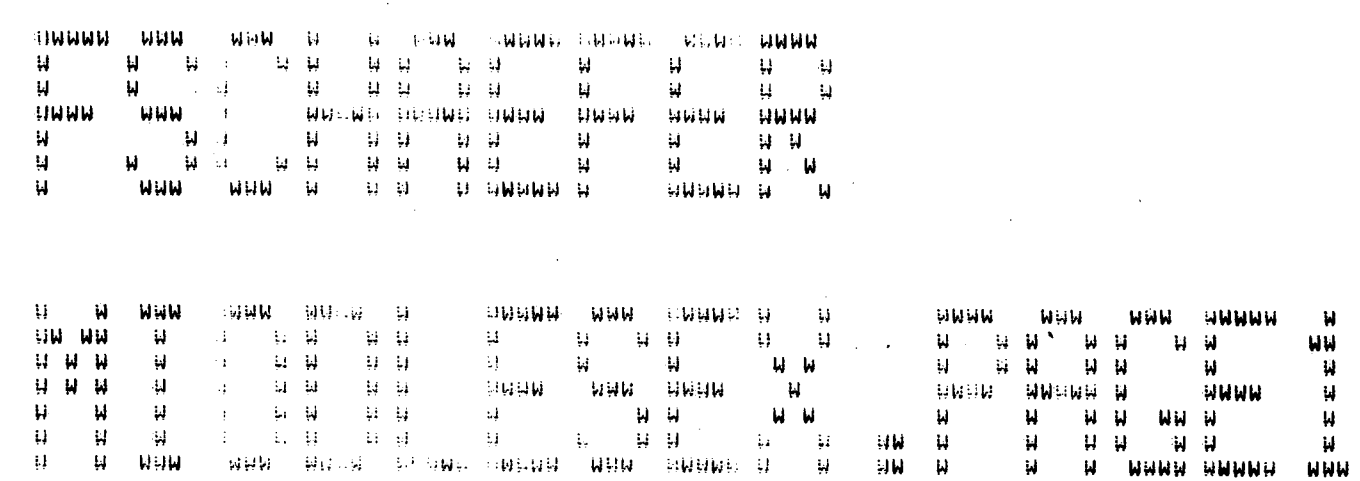
NORMAL ANNUAL TOTAL PRECIPITATION (Inches)



REFERENCE NO. 22

User: FSCHAEFER -at

<USER3>ADP>FSCHAEFER>MIDDLESEX.PAGE1



Label: PRT04 -form #1

Pathname: <USER3>ADP>FSCHAEFER>MIDDLESEX.PAGE1
File last modified: 25-02-20.15:47:12.Thu

Spooled: 86-02-20.15:52:12.Thu [Spooler rev 19.4.5]
Started: 86-02-20.16:07:16.Thu on: PR1 by: MT

U.S. GEOLOGICAL SURVEY TRENTON, NEW JERSEY

GWSI

UNIQUE ID	SITE OWNER	LOCAL ID	MUNICIPALITY	LAT	LON	ALTITUDE	DEPTH	DIAMETER	STATION ID	AQUIFER	SCREENED INTERVAL		W S	DATE	PERMIT	DEPTH DRILLED	UNIQUE ID
231033	NATIONAL LEAD	19-S	SAYREVILLE BORO	402933	0741846	18.		5.	402933074184601				U I	19410205		111.5	231033
231034	NATIONAL LEAD	20-T	SAYREVILLE BORO	402937	0741840	18.		6.	402937074184001				U I	19410503		113.67	231034
231035	CALIFORNIA REFINING	TEST WELL #4	PERTH AMBOY CITY	403210	0741621	25.		6.	403210074162101				U T	19510905	28-00111	110.	231035
231036	CALIFORNIA REFINING	TEST WELL #6	PERTH AMBOY CITY	403200	0741605	37.		6.	403200074160501				U T	19510905	28-00122	104.	231036
231037	CALIFORNIA REFINING	TEST WELL #7	PERTH AMBOY CITY	403156	0741626	54.		6.	403156074162601				U T	19510905	28-00125	134.	231037
231038	CALIFORNIA REFINING	TEST WELL #8	PERTH AMBOY CITY	403214	0741714	66.		6.	403214074171401				U T	19510905	28-00126	113.	231038
231039	CALIFORNIA REFINING	TEST WELL #9	PERTH AMBOY CITY	403136	0741608	53.		6.	403158074160801				U T	19510905	28-00183	116.	231039
231040	CALIFORNIA REFINING	TEST WELL #15	PERTH AMBOY CITY	403156	0741622	56.		6.	403156074162201				U T	19510905	28-00297	139.5	231040
231041	MIDDLESEX COUNTY UTILITIE	MONITORING #1	SAYREVILLE BORO	402807	0742204	5.	58.	4.	402807074220401	211FRNG	48.	58.	U O	19780200	28-10143	76.	231041
231042	MIDDLESEX COUNTY UTILITIE	MONITORING #2	SAYREVILLE BORO	402757	0742214	5.	57.	4.	402757074221401	211FRNG	47.	57.	U O	19780200	28-10142	66.	231042
231043	DOW JONES CO.	BACKUP-2	SOUTH BRUNSWICK TWP	402207	0743510	120	150	6	402207074351001	231LCKG	73	130	U U	19790700	28-11137	150	231043
231044	MAGYAR SAVINGS & LOAN ASS	MAGYAR 1	SOUTH BRUNSWICK TWP	402630	0743604	130	185	10	402630074360601	231BRCK	50	185	C M	19691104	28-06766	185	231044
231044		MAGYAR 1	SOUTH BRUNSWICK TWP	402630	0743604	130		6	402630074360401	231BRCK			C M			185	231044
231045	NJ DEPT OF TRANSPORTATION	SAND HILLS 1	SOUTH BRUNSWICK TWP	402434	0743638	240	245	8	402434074363801	231LCKG	71.83	245	M M	19790629	28-03473	245	231045
231046	CITIES SERVICE CO	15-1970	SOUTH BRUNSWICK TWP	402301	0743320	75	342	8	402301074332001	231LCKG	67	342	M M	19700831	28-06846	342	231046
231046	COLUMBIAN CHEMICALS	15-1970	SOUTH BRUNSWICK TWP	402301	0743320	75	342		402301074332001	231LCKG			M M			342	231046
231047	OTKEN, JR. ED	OTKEN 1	NORTH BRUNSWICK TWP	402602	0742910	110	85	10	402602074291001	231BRCK	50	85	I M	19810717	28-12317	85	231047
231047		OTKEN 1	NORTH BRUNSWICK TWP	402602	0742910	110	85	6	402602074291001	231BRCK			I M			85	231047
231048	CARDONE, ANGELO C	CARDONE	NORTH BRUNSWICK TWP	402703	0742928	120	74	6	402703074292801	231BRCK			I M			74	231048
231049	PASTORE, JOSEPH	PASTORE 1	NORTH BRUNSWICK TWP	402824	0742731	110	173	6	402824074273101	231BRCK	50	74	M M	19640826	28-05084	74	231049
231050	REVEY, EMERY	SOD FARM WELL	NORTH BRUNSWICK TWP	402721	0743031	100	234	6	402721074303101	231BRCK	50	173	I M	19800921	28-11860	173	231050
231051	RUTGERS UNIVERSITY	COOK FARM HOUSE	NORTH BRUNSWICK TWP	402804	0742539	50	160	10	402804074253901	231BRCK	24	234	I M	19630926	28-04791	234	231051
231051		COOK FARM HOUSE	NORTH BRUNSWICK TWP	402804	0742539	50	160	6	402804074253901	231BRCK	53	160	I M	19740827	28-17373	160	231051
231052	GARY MANUFACTURING	INDUSTRIAL-1977	NEW BRUNSWICK CITY	402804	0742839	90	125	10	402804074283901	231BRCK	54	125	M M	19771000	28-19597	125	231052
231052		INDUSTRIAL-1977	NEW BRUNSWICK CITY	402806	0742839	90	125	6	402806074283901	231BRCK			M M			125	231052
231053	RUTGERS UNIVERSITY	RUTGERS GOLF COU	PISCATAWAY TWP	403110	0742812	60	300	12	403110074281201	231BRCK	55	300	I M	19800630	28-21440	300	231053
231053		RUTGERS GOLF COU	PISCATAWAY TWP	403110	0742812	60	300	8	403110074281201	231BRCK			I M			300	231053
231054	RISS INTERNATIONAL	ONE	WOODBRIDGE TWP	403503	0741542	15	300	10	403503074154201	231BRCK	50	300	M M	19800124	28-04831	300	231054
231054	USA EASTERN	ONE	WOODBRIDGE TWP	403503	0741542	15	300	6	403503074154201	231BRCK			M M			300	231054
231055	MIDDLESEX WATER COMPANY	TINGLEY LANE 5	EDISON TWP	403527	0742223	25	312	12	403527074222301	231BRCK	40.18	312	M M	19770705	23-04316	312	231055
231056	MIDDLESEX COUNTY UTILITIE	MONITORING #3	SAYREVILLE BORO	402743	0742216	5.	53.	4.	402743074221601	211FRNG	43.	53.	U O	19780200	28-10141	77.	231056
231057	US ARMY CORPS OF ENGINEER	DH-26A		402887	0741586	0.			402887074158601				U T	19430600		74.5	231057
231058	US GEOLOGICAL SURVEY	MESS BROS #1		402704	0742139	23.	122.	8.75	402704074213901	211FRNG	112.	122.	U O	19861029	28-17742-5	173.	231058
231059	US GEOLOGICAL SURVEY	MESS BROS #2		402704	0742139	23.	148.	8.75	402704074213902	211FRNG	138.	148.	U O	19861120	28-17743-6	167.	231059
231059		MESS BROS #2		402704	0742139	23.	148.	4.	402704074213902	211FRNG			U O			167.	231059
231060	US GEOLOGICAL SURVEY	MARSH AVE #1		402802	0742022	40.	148.	8.75	402802074202201	211FRNG	138.	148.	U O	19861207	28-28904-7	851.	231060
231061	ELIZABETHTOWN WC	HERRINGE HILL 8	MIDDLESEX BORO	403504	0741084	25	430	12	403504074103401	231BRCK	81	430	P M	19831118	23-13397	430	231061
231061		HERRINGE HILL 8	MIDDLESEX BORO	403504	0741084	25	430	10	403504074103401	231BRCK			P M			430	231061
231062	ST AUGUSTINE CHURCH	SCHOOL 1	SOUTH BRUNSWICK TWP	402559	0743221	145	300	12	402559074322101	231BRCK	42.17	300	U M	19820727	28-04424	300	231062
231062		SCHOOL 1	SOUTH BRUNSWICK TWP	402559	0743221	145	300	8	402559074322101	231BRCK			U M			300	231062
231063	FMC RESEARCH LAB	1-WELLNITZ FARM	PLAINSBORO TWP	402026	0743730	95.75	44313.33		402026074373001	231SCKN	422	443	M M	19760700	28-01834	443	231063
231065	PRINCETON FOLDING BOX CO	SARSTEDT 1	SOUTH BRUNSWICK TWP	402150	0743601	100	325	6	402150074360101	231LCKG	72	325	C M	19610515	28-04388	326	231065
231065	SARSTEDT INC	SARSTEDT 1	SOUTH BRUNSWICK TWP	402150	0743601	100	325		402150074360101	231LCKG			C M			326	231065
231066	WHITE, STANLEY	DOMESTIC-1985	CRANBURY TWP	401819	0743402	90	90		401819074340201	211FRNG	80	90	M M	19850123	28-14823	90	231066
231067	PROTINICK, MICHAEL	DOMESTIC 2-1966	CRANBURY TWP	402008	0743231	100	70		402008074323101	211FRNG	64	70	M M	19660916	28-06022	70	231067
231068	PROTINICK, JOHN	DOMESTIC 1-1972	CRANBURY TWP	401943	0742925	110	128		401943074292501	211DBDG	128	128	M M	19720700	28-07378	129	231068
231069	BARCLAY FARMS	BARKLEY FARMS DO	CRANBURY TWP	401901	0743134	105	64		401901074313401	211DBDG	61	64	M M	19630800	28-03550	66	231069
231070		APPLEGATE #6		401948	0742745	125.	285.		401948074274501	211FRNG	265.	285.	U Z				231070
231071	MIDDLESEX WATER COMPANY	PARK 25	SOUTH PLAINFIELD BORO	403545	0742433	70	448	12	403545074243301	231BRCK	75	448	P M	19830000	23-11813	448	231071
231072	MIDDLESEX WATER COMPANY	TINGLEY 2	EDISON TWP	403457	0742538	50	300	12	403457074253801	231BRCK	75	300	P M	19830000	23-04778	300	231072
231072		TINGLEY 2	EDISON TWP	403457	0742538	50	300	10	403457074253801	231BRCK			P M			300	231072
231073	KENDALL CONTINENTAL	KENDALL PARK 3	SOUTH BRUNSWICK TWP	402825	0743351	160	412	14	402825074335101	231BRCK	35	412	I M	19800428		412	231073
231073	SOUTH BRUNSWICK TWP	KENDALL PARK 3	SOUTH BRUNSWICK TWP	402825	0743351	160	412	10	402825074335101	231BRCK			I M			412	231073
231074	ST AUGUSTINE CHURCH	CHURCH 1	SOUTH BRUNSWICK TWP	402557	0743214	145	125.	6	402557074321401	231BRCK	43.42	123.5	U M	19730106	28-00737	123.5	231074
231075	ASHWILL CORPORATION	INDUSTRIAL 1	NORTH BRUNSWICK TWP	402543	0743107	110	251	14	402543074310701	231BRCK	31.17	231	U M	19741209	28-01429	231	231075
231075	STEARNS & FOSTER CO	INDUSTRIAL 1	NORTH BRUNSWICK TWP	402543	0743107	110	251	10	402543074310701	231BRCK			U M			251	231075
231076	US GEOLOGICAL SURVEY	CORE HOLE A	NORTH BRUNSWICK TWP	402630	0742959	110	68	6	402630074295902	231BRCK	12	68	U Z	19860327	29-16876	68	231076
231076		CORE HOLE A	NORTH BRUNSWICK TWP	402630	0742959	110	68	3	402630074295902	231BRCK			U Z			68	231076
231077	US GEOLOGICAL SURVEY	JCPL-BAY		402831	0742120	7	56	6.25	402831074212001	211FRNG	46	36	U O	19870227		73	231077
231078	US GEOLOGICAL SURVEY	BAYER ST		402721	0742210	12	78	6.25	402721074221001	211FRNG	68	78	U O	19870205		84	231078
241079	CAPTIVE PLASTICS	BACKUP-1983	PISCATAWAY TWP	403330	0742843	60	230	8	403330074284301	231BRCK	50	230	M M	19830526	25-23677	230	231079
		1977-MAIN	PISCATAWAY TWP	403330	0742842	60	200	10	403330074284201	231BRCK	50	200	U M	19770000		200	231080
231080		"A1"	PISCATAWAY TWP	403330	0742842	60	200	8	403330074284201	231BRCK			U M			200	231080
231081	COLUMBIAN CHEMICALS	1-1948	SOUTH BRUNSWICK TWP	402300	0743122	70	221	8	402300074312201	211LCKG	83	221	M M	19480000	48-00030	221	231081
231083	JOHNSON & JOHNSON CO	IRRIGATION-UNUSE	NORTH BRUNSWICK TWP	402630	0742959	110	409	12	402630074295901	231BRCK	80	409	U M	19600000		409	231083
231084	PRINCETON UNIVERSITY	DOE WELL D1	PLAINSBORO TWP	402048	0743555	80.9	5.1	0.5	402048074355501		3.6	5.1	U U	19830716	28-16087	5.1	231084
231085	PRINCETON UNIVERSITY	DOE WELL D2	PLAINSBORO TWP	402052	0743558	86.3	5.8		402052074355801	231SCKN	4.5	5.8	U U	19830716	28-16087		231085
231086	PRINCETON UNIVERSITY	DOE WELL D3	PLAINSBORO TWP	402052	0743558	86.3	17.0		402052074355802	231SCKN	14.0	17.0	U U	19861023	28-17693	17.0	231086
231087	PRINCETON UNIVERSITY	DOE WELL D4	PLAINSBORO TWP	402051	0743555	84.4	19.		402051074355501	231SCKN	16.	19.	U U	19861030	28-17694	19.	231087
231088	PRINCETON UNIVERSITY	DOE WELL D5	PLAINSBORO TWP	402050	0743553	81.5	18.0		402050074355301	231SCKN	15.	18.	U U	19861030	28-17695	18.0	231088
231089	PRINCETON UNIVERSITY	DOE WELL H1	PLAINSBORO TWP	402039	0743601	77.6	6.2		402039074360101		4.7	6.2	U U	19830688	28-16082	6.2	231089
231090	PRINCETON UNIVERSITY	DOE WELL H1A	PLAINSBORO TWP	402039	0743601	77.4	18.0		402039074360102	231SCKN	15.0	18.	U U	19861030	28-17690	18.0	231090
231091	PRINCETON UNIVERSITY	DOE WELL H2	PLAINSBORO TWP	402040	0743602	80.5	5.2		402040074360201		3.7	5.2	U U	19830716	28-16083	5.2	231091
231092	PRINCETON UNIVERSITY	DOE WELL H3	PLAINSBORO TWP	402042	0743606	84.5	10.1		402042074360601		8.6	10.1	U U	19830716	28-16084	10.1	231092
231093	PRINCETON UNIVERSITY	DOE WELL H3A	PLAINSBORO TWP	402042	0743606	84.4	19.5		402042074360602	231SCKN	16.5	19.5	U U	19861030	28-17691	19.5	231093
231094	PRINCETON UNIVERSITY	DOE WELL H4	PLAINSBORO TWP	402047	0743609	88.1	9.7		402047074360901		8.2	9.7	U U	19830716	28-16085	9.7	231094
231095	PRINCETON UNIVERSITY	DOE WELL H4A	PLAINSBORO TWP	402047	0743609	88.1	16.2		402047074360902	231SCKN	13.2	16.2	U U	19861030	28-17692	16.2	231095
231096	PRINCETON UNIVERSITY	DOE WELL N1	PLAINSBORO TWP	402103	0743556	91.5	9.5		402103074355601		8.0	9.5	U U	19830688	28-16090	9.5	231096
231097	PRINCETON UNIVERSITY	DOE WELL N2	PLAINSBORO TWP	402102	0743559	92.3	9.6		402102074355901		8.1	9.6	U U	19830716	28-16091	9.6	231097
231098	PRINCETON UNIVERSITY	DOE WELL N3	PLAINSBORO TWP	402102	0743601	92.0	16.3		402102074360101	231SCKN	14.8	16.3	U U	19830716	28-16092	16.3	231098
231099	PRINCETON UNIVERSITY	DOE WELL N4A	PLAINSBORO TWP	402103	0743606	93.9	11.0		402103074360601	231SCKN	9.	11.	U U	19861030	28-17689	11.0	231099
231100	PRINCETON UNIVERSITY	DOE WELL N4B	PLAINSBORO TWP	402103	0743606	93.9	6.0		402103074360602		3.	6.	U U	19861030	28-17688	6.0	231100
231101	PRINCETON UNIVERSITY	DOE WELL R2	PLAINSBORO TWP	402101	0743552	89.9	13.9		402101074355201		12.4	13.9	U U	19830627	28-16088	13.9	231101
231102	PRINCETON UNIVERSITY	DOE WELL R3	PLAINSBORO TWP	402099	0743557	93.5	10.3		402099074355702		8.8	10.3	U U	19830628	28-16089	10.3	231102
231103	PRINCETON UNIVERSITY	DOE WELL R4A	PLAINSBORO TWP	402100	0743554	93.5	18.0		402100074355401	231SCKN	15.0	18.0	U U	19860303	28-16093	18.0	231103
231104	PRINCETON UNIVERSITY	DOE WELL R4B	PLAINSBORO TWP	402100	0743554	93.5	15.		402100074355402		12.	15.	U U	19861030	28-17696	15.	231104
231105	PRINCETON UNIVERSITY	DOE WELL R5A	PLAINSBORO TWP	402100	0743553	92.7	30.0		402100074355301	231SCKN	27.0	30.0	U U	19860300	28-16094	30.0	231105
231106	PRINCETON UNIVERSITY	DOE WELL R5B	PLAINSBORO TWP	402100	0743553	92.7	23.0		402100074355302		20.	23.0	U U	19861030	28-17697	23.0	231106
231107	PRINCETON UNIVERSITY	DOE WELL R6	PLAINSBORO TWP	402100	0743552	91.3	27.0		402100074355201	231SCKN	24.0	27.0	U U	19860300	28-16095	27.0	231107
231108	PRINCETON UNIVERSITY	DOE WELL R8A	PLAINSBORO TWP	402101	0743549	86.3	28.0		402101074354901	231SCKN	25.0	28.0	U U	19860300	28-16096	28.0	231108

DATE: 01/09/89

UNIQUE ID	SITE	LOCAL ID	MUNICIPALITY	LAT	LON	ALTITUDE	DEPTH	DIAMETER	GWSI STATION ID	AQUIFER	SCREENED INTERVAL	W	S	DATE	PERMIT	DEPTH DRILLED	UNIQUE ID
230853	US ARMY CORPS OF ENGINEER	DH-23E	SAYREVILLE BORO	402818	0742208	6.0			402818074220801			U	T			30.	230853
230856	US ARMY CORPS OF ENGINEER	DH-24E	EDISON TWP	402826	0742152	6.0			402826074215201			U	T			30.	230856
230857	US ARMY CORPS OF ENGINEER	DH-24W	EDISON TWP	402832	0742144	6.1			402832074214401			U	T			30.	230857
230858	US ARMY CORPS OF ENGINEER	DH-25E	EDISON TWP	402837	0742133	7.0			402837074213301			U	T				230858
230859	US ARMY CORPS OF ENGINEER	DH-25W	SAYREVILLE BORO	402846	0742115	7.4			402846074211501			U	T				230859
230860	US ARMY CORPS OF ENGINEER	DH-26E	SAYREVILLE BORO	402855	0742100	7.0			402855074210001			U	T				230860
230861	US ARMY CORPS OF ENGINEER	DH-26W	EDISON TWP	402837	0742138	6.1			402837074213801			U	T			30.	230861
230862	MIDDLESEX COUNTY UTILITIES	O-01	SOUTH AMBOY CITY	402912	0741640	8.4			402912074164001			U	T			30.	230862
230863	MIDDLESEX COUNTY UTILITIES	O-04	SOUTH AMBOY CITY	402932	0741806	8.9			402932074180601			U	T	19550300		30.	230863
230864	MIDDLESEX COUNTY UTILITIES	O-16	SOUTH AMBOY CITY	402848	0744442	0.0			402848074144201			U	T	19550300		30.	230864
230865	MIDDLESEX COUNTY UTILITIES	O-19	SOUTH AMBOY CITY	402851	0741455	0.0			402851074145501			U	T	19550300		30.	230865
230866	MIDDLESEX COUNTY UTILITIES	O-29	SOUTH AMBOY CITY	402700	0741542	0.0			402700074154201			U	T	19550300		30.	230866
230867	MIDDLESEX COUNTY UTILITIES	O-30	SOUTH AMBOY CITY	402901	0741550	0.0			402901074155001			U	T	19550300		101.	230867
230868	MIDDLESEX COUNTY UTILITIES	O-33	SOUTH AMBOY CITY	402904	0741605	0.0			402904074160501			U	T	19550300		30.	230868
230869	MIDDLESEX COUNTY UTILITIES	O-34	SOUTH AMBOY CITY	402905	0741615	0.0			402905074161501			U	T	19550300		30.	230869
230870	MIDDLESEX COUNTY UTILITIES	O-37	SOUTH AMBOY CITY	402908	0741630	2.7			402908074163001			U	T	19550300		30.5	230870
230871	MIDDLESEX COUNTY UTILITIES	O-52	SOUTH AMBOY CITY	402910	0741643	13.4			402910074164301			U	T	19550300		30.	230871
230872	MIDDLESEX COUNTY UTILITIES	O-56	SOUTH AMBOY CITY	402915	0741654	23.5			402915074165401			U	T	19550300		34.	230872
230873	MIDDLESEX COUNTY UTILITIES	O-54	SOUTH AMBOY CITY	402925	0741740	28.5			402925074174001			U	T	19550300		30.5	230873
230874	MIDDLESEX COUNTY UTILITIES	O-57A	SOUTH AMBOY CITY	402926	0741822	118.			402926074182201			U	T	19550300		110.	230874
230875	MIDDLESEX COUNTY UTILITIES	O-57A6	SOUTH AMBOY CITY	402928	0741816	108.8			402928074181601			U	T	19550300		34.	230875
230876	MIDDLESEX COUNTY UTILITIES	O-58	SOUTH AMBOY CITY	402924	0741808	103.6			402924074180801			U	T	19550300		86.	230876
230877	MIDDLESEX COUNTY UTILITIES	SR-01	SAYREVILLE BORO	402802	0742212	4.0			402802074221201			U	T	19750314		31.5	230877
230878	MIDDLESEX COUNTY UTILITIES	SR-02	SAYREVILLE BORO	402800	0742215	4.9			402800074221501			U	T	19750314		31.5	230878
230879	MIDDLESEX COUNTY UTILITIES	SR-03	SAYREVILLE BORO	402757	0742216	5.4			402757074221601			U	T	19750319		31.5	230879
230880	MIDDLESEX COUNTY UTILITIES	SR-04	SAYREVILLE BORO	402753	0742217	5.6			402753074221701			U	T	19750317		30.	230880
230881	MIDDLESEX COUNTY UTILITIES	SR-05	SAYREVILLE BORO	402748	0742216	5.5			402748074221601			U	T	19750317		30.	230881
230882	MIDDLESEX COUNTY UTILITIES	SR-06	SAYREVILLE BORO	402743	0742215	5.0			402743074221501			U	T	19750317		30.	230882
230883	MIDDLESEX COUNTY UTILITIES	SR-07	SAYREVILLE BORO	402739	0742215	5.4			402739074221501			U	T	19750317		30.	230883
230884	MIDDLESEX COUNTY UTILITIES	SR-08	SAYREVILLE BORO	402735	0742215	5.6			402735074221501			U	T	19750319		31.5	230884
230885	MIDDLESEX COUNTY UTILITIES	SR-09	SAYREVILLE BORO	402731	0742215	5.			402731074221501			U	T	19750319		31.	230885
230886	MIDDLESEX COUNTY UTILITIES	SR-10	SAYREVILLE BORO	402727	0742214	5.3			402727074221401			U	T	19750318		30.	230886
230887	MIDDLESEX COUNTY UTILITIES	SR-11	SAYREVILLE BORO	402725	0742214	5.6			402725074221401			U	T	19750318		31.5	230887
230888	MIDDLESEX COUNTY UTILITIES	SR-12	SAYREVILLE BORO	402721	0742213	0.			402721074221301			U	T	19750318		30.	230888
230889	MIDDLESEX COUNTY UTILITIES	SR-13	SAYREVILLE BORO	402719	0742213	10.8			402719074221301			U	T	19750318		30.	230889
230890	MIDDLESEX COUNTY UTILITIES	SR-14	SAYREVILLE BORO	402717	0742213	8.7			402717074221301			U	T	19750317		30.	230890
230891	MIDDLESEX COUNTY UTILITIES	SR-15	SAYREVILLE BORO	402716	0742211	2.4			402711074221101			U	T	19750319		31.5	230891
230892	MIDDLESEX COUNTY UTILITIES	SR-16	SAYREVILLE BORO	402712	0742212	8.0			402712074221201			U	T	19750319		30.	230892
230893	MIDDLESEX COUNTY UTILITIES	SR-17	SAYREVILLE BORO	402709	0742212	7.2			402709074221201			U	T	19750319		30.	230893
230894	MIDDLESEX COUNTY UTILITIES	SR-18	SAYREVILLE BORO	402705	0742209	7.8			402705074220901			U	T	19750321		31.5	230894
230895	MIDDLESEX COUNTY UTILITIES	SR-19	SAYREVILLE BORO	402703	0742206	7.4			402703074220601			U	T	19750407		30.	230895
230896	MIDDLESEX COUNTY UTILITIES	SR-20	SAYREVILLE BORO	402659	0742201	10.			402659074220101			U	T	19750404		30.	230896
230897	MIDDLESEX COUNTY UTILITIES	SR-21	SAYREVILLE BORO	402658	0742159	5.9			402658074215901			U	T	19750321		31.5	230897
230898	MIDDLESEX COUNTY UTILITIES	SR-23	SAYREVILLE BORO	402652	0742152	8.5			402652074215201			U	T	19750321		30.	230898
230899	MIDDLESEX COUNTY UTILITIES	SR-24	SAYREVILLE BORO	402651	0742142	8.3			402651074214301			U	T	19750321		30.	230899
230900	MIDDLESEX COUNTY UTILITIES	SR-25	SAYREVILLE BORO	402651	0742139	9.2			402651074213901			U	T	19750320		30.5	230900
230901	MIDDLESEX COUNTY UTILITIES	SR-26	SAYREVILLE BORO	402651	0742132	10.6			402651074213201			U	T	19750321		34.	230901
230902	MIDDLESEX COUNTY UTILITIES	SR-28	SAYREVILLE BORO	402647	0742129	3.5			402647074212901			U	T	19750325		30.5	230902
230903	MIDDLESEX COUNTY UTILITIES	SR-30	SAYREVILLE BORO	402642	0742128	5.6			402642074212801			U	T	19750408		34.	230903
230904	MIDDLESEX COUNTY UTILITIES	SR-31	SAYREVILLE BORO	402628	0742122	9.18			402628074212201			U	T	19750325		33.	230904
230905	MIDDLESEX COUNTY UTILITIES	SR-32	SAYREVILLE BORO	402623	0742121	9.74			402623074212101			U	T	19750325		37.	230905
230906	MIDDLESEX COUNTY UTILITIES	SR-34	SAYREVILLE BORO	402614	0742115	7.03			402614074211501			U	T	19750408		37.	230906
230907	MIDDLESEX COUNTY UTILITIES	SR-35	SAYREVILLE BORO	402608	0742113	8.84			402608074211301			U	T	19750325		37.	230907
230908	MIDDLESEX COUNTY UTILITIES	SR-36	SAYREVILLE BORO	402605	0742112	8.22			402605074211201			U	T	19750326		31.5	230908
230909	MIDDLESEX COUNTY UTILITIES	SR-37	SAYREVILLE BORO	402558	0742108	7.19			402558074210801			U	T	19750328		31.5	230909
230910	MIDDLESEX COUNTY UTILITIES	SR-39	SAYREVILLE BORO	402553	0742107	1.2			402553074210701			U	T	19750328		87.	230910
230911	MIDDLESEX COUNTY UTILITIES	SR-41	SAYREVILLE BORO	402543	0742108	8.66			402543074210801			U	T	19750403		34.	230911
230912	MIDDLESEX COUNTY UTILITIES	SR-42	SAYREVILLE BORO	402535	0742110	8.99			402535074211001			U	T	19750328		87.	230912
230913	MIDDLESEX COUNTY UTILITIES	SR-43	SAYREVILLE BORO	402527	0742111	9.0			402527074211101			U	T	19750327		87.	230913
230914	MIDDLESEX COUNTY UTILITIES	SR-44	SAYREVILLE BORO	402525	0742112	11.91			402525074211201			U	T	19750328		87.	230914
230915	MIDDLESEX COUNTY UTILITIES	SR-45	SAYREVILLE BORO	402519	0742113	7.38			402519074211301			U	T	19750327		21.5	230915
230916	MIDDLESEX COUNTY UTILITIES	SR-46	SAYREVILLE BORO	402517	0742115	1.3			402517074211501			U	T	19750327		87.	230916
230917	MIDDLESEX COUNTY UTILITIES	SR-47	SAYREVILLE BORO	402516	0742116	3.27			402516074211601			U	T	19750401		87.	230917
230918	MIDDLESEX COUNTY UTILITIES	SR-48	OLD BRIDGE TWP	402514	0742114	2.61			402514074211401			U	T	19750327		87.	230918
230919	MIDDLESEX COUNTY UTILITIES	SR-48C	OLD BRIDGE TWP	402509	0742123	4.0			402509074212301			U	T	19750411		84.	230919
230920	MIDDLESEX COUNTY UTILITIES	SR-49	OLD BRIDGE TWP	402505	0742128	11.99			402505074212801			U	T	19750411		82.	230920
230921	MIDDLESEX COUNTY UTILITIES	SR-54	OLD BRIDGE TWP	402459	0742134	4.27			402459074213401			U	T	19750328		21.5	230921
230922	MIDDLESEX COUNTY UTILITIES	SR-56	OLD BRIDGE TWP	402439	0742139	1.4			402439074213901			U	T	19750328		88.	230922
230923	MIDDLESEX COUNTY UTILITIES	SR-57	OLD BRIDGE TWP	402457	0742142	4.25			402457074214201			U	T	19750402		35.	230923
230924	MIDDLESEX COUNTY UTILITIES	SR-58	EAST BRUNSWICK TWP	402434	0742149	7.53			402434074214901			U	T	19750328		21.5	230924
230925	MIDDLESEX COUNTY UTILITIES	SR-60	EAST BRUNSWICK TWP	402449	0742201	15.3			402449074220101			U	T	19750331		88.	230925
230926	MIDDLESEX COUNTY UTILITIES	SR-64	EAST BRUNSWICK TWP	402606	0742118	15.			402606074211801			U	T	19750331		87.	230926
230927	MIDDLESEX COUNTY UTILITIES	SR-66	EAST BRUNSWICK TWP	402605	0742122	9.48			402605074212201			U	T	19750318		87.	230927
230928	MIDDLESEX COUNTY UTILITIES	SR-67	EAST BRUNSWICK TWP	402605	0742125	9.98			402605074212501			U	T	19750318		88.	230928
230929	MIDDLESEX COUNTY UTILITIES	SR-68	EAST BRUNSWICK TWP	402603	0742128	3.96			402603074212801			U	T	19760319		88.	230929
230930	MIDDLESEX COUNTY UTILITIES	SR-71	EAST BRUNSWICK TWP	402601	0742133	0.1			402601074213301			U	T	19760319		88.	230930
230931	MIDDLESEX COUNTY UTILITIES	SR-72	EAST BRUNSWICK TWP	402602	0742135	15.73			402602074213501			U	T	19760323		87.	230931
230932	PRINCETON UNIVERSITY	CORE HOLE 1	PLAINSBORO TWP	402058	0743509	98.			402058074350901			U	T	19760322		35.	230932
230933	ELIZABETHTOWN WATER COMPA	EIGHTH STREET	SOUTH PLAINFIELD BORO	403148	0741848	30.	350	12	403148074184801	231SCKN						120.	230933
230934	AMERICAN METAL MOULDING C	FOUR	EDISON TWP	403208	0742418	120	500	10	403208074241801	231BRCK	61 350					350.	230934
230934		FOUR	EDISON TWP	403208	0742418	120	500	10	403208074241801	231BRCK	50 500			19821000	25-23302	500.	230934
230936	COLUMBIAN CHEMICALS	ELEVEN	SOUTH BRUNSWICK TWP	402258	0743340	80	400	10	402258074334001	231BRCK						400.	230936
230936		ELEVEN	SOUTH BRUNSWICK TWP	402258	0743340	80	400	10	402258074334001	231LCKG	26.5 305			19310321	28-00247	305.	230936
230937	MIDDLESEX COUNTY UTILITIE	L-3	SAYREVILLE BORO	402815	0742203	8.0			402815074220301			U	T	19750331		40.	230937
230938	MIDDLESEX COUNTY UTILITIE	L-4	SAYREVILLE BORO	402815	0742204	-0.4			402815074220401			U	T	19750326		40.	230938
230939	MIDDLESEX COUNTY UTILITIE	L-5	SAYREVILLE BORO	402815	0742205	-0.1			402815074220501			U	T	19750328		40.	230939
230940	MIDDLESEX COUNTY UTILITIE	L-6	SAYREVILLE BORO	402816	0742206	8.82			402816074220601			U	T	19750318		40.	230940
230941	MIDDLESEX COUNTY UTILITIE	L-7	SAYREVILLE BORO	402819	0742213	4.2			402819074221301			U	T	19750325		40.	230941
230942	MIDDLESEX COUNTY UTILITIE	L-8	SAYREVILLE BORO	402820	0742214	3.9			402820074221401			U	T	19750331		40.	230942
230943	MIDDLESEX COUNTY UTILITIE	L-9	SAYREVILLE BORO	402821	0742218	5.			402821074221801			U	T	19750401		42.	230943

DATE: 01/09/89

GWSI

UNIQUE ID	SITE OWNER	LOCAL ID	MUNICIPALITY	LAT	LON	ALTITUDE	DEPTH	DIAMETER	STATION ID	AQUIFER	SCREENED INTERVAL		W	S	DATE	PERMIT	DEPTH DRILLED	UNIQUE ID
230274	GERAGHTY, MILLER	4-5	PLAINSBORO TWP	401934	0743323	70.00	43.0		401934074332501	112BRDG	40.00	43.00	U	T	1970			230274
230275	GERAGHTY, MILLER	4-6	PLAINSBORO TWP	401935	0743321	60.00	43.0		401935074332101	112BRDG	40.00	43.00	U	T	1970			230275
230276	GERAGHTY, MILLER	4-2	PLAINSBORO TWP	401935	0743330	68.00	62.0		401935074333001	112BRDG	57.00	62.00	U	T	1970			230276
230277	GERAGHTY, MILLER	4-4	PLAINSBORO TWP	401936	0743325	60.00	43.0		401936074332501	112BRDG	40.00	43.00	U	T	1970			230277
230278	GERAGHTY, MILLER	4-7	PLAINSBORO TWP	401936	0743328	65.00	43.0		401936074332801	112BRDG	40.00	43.00	U	T	1970			230278
230279	GERAGHTY, MILLER	4-8	PLAINSBORO TWP	401936	0743331	60.00	43.0		401936074333101	112BRDG	40.00	43.00	U	T	1970			230279
230280	GERAGHTY, MILLER	4-1	PLAINSBORO TWP	401937	0743322	60.00	43.0		401937074332201	112BRDG	40.00	43.00	U	T	1970			230280
230281	GERAGHTY, MILLER	4-2	PLAINSBORO TWP	401938	0743328	60.00	23.0		401938074332801	112BRDG	20.00	23.00	U	T	1970			230281
230282	GERAGHTY, MILLER	4-3	PLAINSBORO TWP	401938	0743330	70.00	24.0		401938074333001	112BRDG	21.00	24.00	U	T	1970			230282
230283	SIMONSON BROS	2	PLAINSBORO TWP	402006	0743319	90.00	80.0		402006074331901	112BRDG			U	T	1970			230283
230284	SIMONSON BROS	1	PLAINSBORO TWP	402022	0743306	90.00	90.0		402022074330601	211FRNG			I	N	19670419			230284
230285	JIS LANDFILL	4	SOUTH BRUNSWICK TWP	402159	0742744	111.00	88.0		402159074274401	112PNSK	62.00	82.00	N	N	1932			230285
230286	S T O REALTY	1968 WELL	SOUTH BRUNSWICK TWP	402016	0743019	105.00	125		402016074301901	211DBG	122.00	125.00	N	N	197511			230286
230287	FORSGATE W C	OBS 1	SOUTH BRUNSWICK TWP	402054	0742929	135.00	245		402051074294301	211FRNG	218.00	228.00	N	N	1968			230287
230288	FORSGATE W C	TEST 1	SOUTH BRUNSWICK TWP	402054	0742929	133.00	200		402036074293601	211FRNG	190.00	200.00	N	N	19360428			230288
230289	MONROE TWP MUA	13(KIMBRY-CLK)	SOUTH BRUNSWICK TWP	402056	0742737	134.00	257		402036074293701	211FRNG	227.00	257.00	N	N	19360423			230289
230290	FORSGATE W C	OBS 2	SOUTH BRUNSWICK TWP	402057	0742646	140.00	288		402057074264901	211FRNG	218.00	288.00	N	N	19360521			230290
230291	MONROE TWP MUA	OBS 1-1961	SOUTH BRUNSWICK TWP	402109	0743011	106.79	203		402109074301101	211FRNG	192.00	203.00	U	Q	1961			230291
230292	MONROE TWP MUA	OBS 2-1961	SOUTH BRUNSWICK TWP	402109	0743012	106.89	104		402109074301202	211DBG	93.00	104.00	U	Q	1961			230292
230293	FORSGATE W C	OBS 3	SOUTH BRUNSWICK TWP	402113	0742922	115.00	203		402114074292701	211FRNG	195.00	203.00	U	Z	19360310			230293
230294	KORLESKI	KORLESKI 1	SOUTH BRUNSWICK TWP	402124	0742824	140.00	104		402124074282401	211DBG			U	U				230294
230295	GREFCO INC	LAKES CARBON 1	SOUTH BRUNSWICK TWP	402125	0742920	120.00	233		402125074292001	211FRNG	187.00	233.00	N	N	19661121	28-06050		230295
230296	INTERM PERMALITE	LAKES CARBON 1	SOUTH BRUNSWICK TWP	402125	0742920	120.00	233		402125074292001	211FRNG			N	N				230296
230297	QUALITY EGG CO	2 (ABEEL:J.F.)	SOUTH BRUNSWICK TWP	402126	0742939	115.00	97.0		402126074293901	211DBG			U	U				230297
230298	QUALITY EGG CO	1 (ABEEL:J.F.)	SOUTH BRUNSWICK TWP	402124	0742935	115.00	175		402128074294301	211FRNG			U	Z				230298
230299	STAUFFER CHEM	1	SOUTH BRUNSWICK TWP	402129	0742901	122.60	237		402129074290101	211FRNG	164.00	175.00	U	Z	19570529			230299
230299	BADISHE PRODUCT	J-4	SOUTH BRUNSWICK TWP	402130	0742821	120.00	127		402130074282101	211FRNG	217.00	227.00	N	N	19650603			230300
230300	BASF-WYANDOTTE	J-4	SOUTH BRUNSWICK TWP	402129	0742824	120.00	127		402130074282101	211DBG	109.00	129.00	N	N		28-11549	300	230301
230300	BADISHE PRODUCT	BASF 2	SOUTH BRUNSWICK TWP	402128	0742824	130.00	288		402130074282101	211DBG	107.00	127.00	N	N	1936		300	230302
230300	BASF-WYANDOTTE	BASF 2	SOUTH BRUNSWICK TWP	402132	0742919	130.00	288		402130074282401	211FRNG	248.00	288.00	N	N	19660924			230303
230301	FORSGATE W C	OBS 4	SOUTH BRUNSWICK TWP	402138	0742940	119.00	215		402130074292301	211FRNG			N	N				230304
230302	FORSGATE W C	FORSGATE 14	SOUTH BRUNSWICK TWP	402138	0742940	115.00	200		402134074294001	211FRNG	202.00	212.00	U	Z	19360311			230305
230302	MONROE TWP MUA	FORSGATE 14	SOUTH BRUNSWICK TWP	402138	0742940	115.00	200		402134074294001	211FRNG	170.00	200.00	U	Z	19550414			230306
230302	SOUTH BRUNSWICK MUA	FORSGATE 14	SOUTH BRUNSWICK TWP	402138	0742940	115.00	200		402134074294001	211FRNG			P	N				230307
230303	PHELPS DODGE CO	2-1957	SOUTH BRUNSWICK TWP	402139	0742820	105.00	227		402139074282001	211FRNG			N	N				230308
230304	PHELPS DODGE CO	JR-1962	SOUTH BRUNSWICK TWP	402143	0742821	127.00	222		402143074282101	211FRPA	197.00	227.00	N	N	19570612			230309
230305	PHELPS DODGE CO	1-1957	SOUTH BRUNSWICK TWP	402143	0742821	127.00	222		402143074282102	211FRNG	192.00	222.00	N	N	19620105			230310
230306	PHELPS DODGE CO	PHELPS DODGE 3	SOUTH BRUNSWICK TWP	402147	0742847	120.00	207		402147074284701	211FRNG	205.00	225.00	U	Z	19570314			230311
230307	KORDUS, TEDDY	1	MONROE TWP	402150	0742744	120.00	120		402150074274401	211FRNG	201.00	207.00	U	Q	1968			230312
230308	JIS LANDFILL	2	SOUTH BRUNSWICK TWP	402154	0742758	103.40	71.0		402151074275201	112PNSK	100.00	120.00	I	N	1961			230313
230309	JIS LANDFILL	1	SOUTH BRUNSWICK TWP	402151	0742751	122.20	81.0		402150074280101	112PNSK	31.00	71.00	U	Q	197509			230314
230310	PERMUTIT CORP	4-(28-6108)	SOUTH BRUNSWICK TWP	402156	0743510	110.00	79.0		402159074351001	211FRNG	61.00	81.00	U	Q	197509			230315
230310	SYBRON CHEMICAL INC	4-(28-6108)	SOUTH BRUNSWICK TWP	402159	0743510	110.00	79.0		402159074351001	211FRNG	69.00	79.00	N	N	19661209			230316
230311	SOUTHARD, R M	1(WINCKMAN,W)	SOUTH BRUNSWICK TWP	402159	0743017	105.0	107		402200074301701	211FRNG			N	N				230317
230312	PERMUTIT CORP	TEST HOLE 1	SOUTH BRUNSWICK TWP	402200	0743514	120.00	77.0		402200074351401	211FRNG	104.00	107.00	N	N	19570112			230318
230312	SYBRON CHEMICAL INC	TEST HOLE 1	SOUTH BRUNSWICK TWP	402200	0743514	120.00	77.0		402200074351402	211FRNG	72.00	77.00	N	N	19661208			230319
230313	PERMUTIT CORP	TEST HOLE 2	SOUTH BRUNSWICK TWP	402200	0743514	120.00	77.0		402200074351403	211FRNG								230320
230313	SYBRON CHEMICAL INC	TEST HOLE 2	SOUTH BRUNSWICK TWP	402200	0743514	120.00	77.0		402200074351404	211FRNG	72.00	77.00	U	T	1966			230321
230314	PERMUTIT CORP	TEST HOLE 3	SOUTH BRUNSWICK TWP	402200	0743514	120.00			402200074351405	211FRNG								230322
230314	SYBRON CHEMICAL INC	TEST HOLE 3	SOUTH BRUNSWICK TWP	402200	0743514	120.00			402200074351406	211FRPA			U	T	1966			230323
230315	SOUTH BRUNSWICK MUA	13	SOUTH BRUNSWICK TWP	402204	0743524	102.20	138		402204074352401	211FRNG	103.00	138.00	P	N	19710803			230324
230316	AERODHEM CORP	AERODHEM 2	SOUTH BRUNSWICK TWP	402206	0743525	120.00	100		402206074352501	211FRNG			C	N	1961			230325
230317	JIS LANDFILL	3	SOUTH BRUNSWICK TWP	402207	0742735	109.70	71.0		402207074273501	112PNSK	31.00	71.00	U	Q	197510			230326
230318	AERODHEM CORP	ABANDONED WELL	SOUTH BRUNSWICK TWP	402207	0743517	120.00	100		402207074351701	211FRNG			U	U				230327
230319	SOUTH BRUNSWICK MUA	12	SOUTH BRUNSWICK TWP	402220	0742750	98.80	135		402220074275001	211FRNG			U	U				230328
230320	HOLSTEIN JR.C	1	SOUTH BRUNSWICK TWP	402223	0742824	100.00	182		402220074284901	211FRNG	110.00	135.00	P	N	19631203			230329
230322	SOUTH BRUNSWICK MUA	11	SOUTH BRUNSWICK TWP	402230	0743040	122.00	115		402223074282401	211FRNG	162.00	182.00	I	N	19521123			230330
230323	SMITH, LAWRENCE	1966	SOUTH BRUNSWICK TWP	402229	0742810	100.00	164		402230074304001	211FRNG	93.46	115.46	P	N	19631028			230331
230325	MID EAST ALUM	1 ANODIZING DIV	SOUTH BRUNSWICK TWP	402231	0743003	110.0	116		402229074281001	211FRNG	134.00	164.00	N	N	19660322			230332
230326	SANTOMASSO, A J	1	SOUTH BRUNSWICK TWP	402109	0743131	98.00	30.0		402230074300501	211FRNG	101.00	116.00	N	N	19631120	28-04665		230333
230327	S BRUNSWICK BD ED	HIGH SCHOOL	SOUTH BRUNSWICK TWP	402109	0743134	95.00	39.0		402109074313101	211FRNG	44.00	49.00	N	N	19570115			230334
230328	GIBBS NURSERY	GIBBS 1973	SOUTH BRUNSWICK TWP	402310	0742825	130.00	96.0		402309074313401	211FRNG	29.00	39.00	U	T	19591006			230335
230329	DEY BROTHERS	2	SOUTH BRUNSWICK TWP	402315	0742830	115.00	248		402310074283501	211DBG	84.00	96.00	U	T	19730402			230336
230330	AHMED, MUSTAPHA	1	SOUTH BRUNSWICK TWP	402317	0742717	115.00	90.0		402315074265201	211FRNG	215.00	248.00	U	T	19550325			230337
230331	DEY BROTHERS	J-1965	SOUTH BRUNSWICK TWP	402318	0742800	110.00	90.0		402317074271701	211FRNG	176.00	206.00	N	N	1936			230338
230332	AHMED, MUSTAPHA	2	SOUTH BRUNSWICK TWP	402319	0742800	105.00	208		402318074265001	211DBG			N	N	1965			230339
230333	FORGOTSON, SAM	1	SOUTH BRUNSWICK TWP	402357	0748632	107.00	49.0		402319074271101	211FRNG	178.00	208.00	I	N	19580627	28-03140		230340
230334	FORGOTSON, SAM	5 BRUNSWICK TWP	SOUTH BRUNSWICK TWP	402357	0748647				402357074264301	211MRPA	45.00	49.00	U	N	19550618			230341
230335	ELIZABETHTOWN W	R3A CLINTON	SOUTH PLAINFIELD BORO	402434	0748122	70.00	350		402357074264701				N	N				230342
230336	WINDSOR W C	31 PARK AVE	SOUTH PLAINFIELD BORO	402430	0748046	71.00	500		402434074480401	211BRCK	77.00	330.00	P	N	19631029	28-13334		230343
230337	WINDSOR W C	21 PARK AVE	SOUTH PLAINFIELD BORO	402432	0748118	71.00	500		402430074480101	211BRCK	110.00	500.00	P	N	19631014			230344
230338	WINDSOR W C	29 PARK AVE	SOUTH PLAINFIELD BORO	402431	0748047	71.00	500		402432074481401	211BRCK	110.00	500.00	P	N	1964			230345
230339	WINDSOR W C	27 PARK AVE	SOUTH PLAINFIELD BORO	402431	0748047	71.00	500		402431074480701	211BRCK	100.00	500.00	P	N	1964			230346
230340	WINDSOR W C	25 PARK AVE	SOUTH PLAINFIELD BORO	402430	0748046	71.00	500		402431074480701	211BRCK	100.00	500.00	P	N	1964			230347
230340	WINDSOR WATER CO	30 PARK AVE	SOUTH PLAINFIELD BORO	402430	0748046	71.00	500	18	402430074480401	211BRCK	97.00	500.00	P	N	1964			230348
230341	NJ WATER POLICY	QUIGLEY	SOUTH PLAINFIELD BORO	402355	0742452	73.00	500	12	402355074245201	211BRCK	97.00	500.00	P	N	19580912A		500	230349
230342	NJ WATER POLICY	TECH TAPE 3	SAYREVILLE BORO	402316	0742731	10.00	29.0		402316074273101	112CPNY	20.00	29.00	U	U	1968		500	230350
230343	NJ WATER POLICY	SUN BISCUIT 5	SAYREVILLE BORO	402527	0742118	10.00	36.0		402527074211801	211DBG	33.00	36.00	U	D	19680126			230351
230344	SAYREVILLE W D	SWD 2	SAYREVILLE BORO	402533	0742015	17.00	39.0		402533074203301	211DBG	36.00	39.00	U	D	1968			230352
230345	SAYREVILLE W D	SWD J	SAYREVILLE BORO	402538	0742013	22.19	37.0		402536074201301	211DBG	31.00	37.00	U	D	1937			230353
230346	SAYREVILLE W D	SWD B	SAYREVILLE BORO	402604	0742003	30.00	83.0		402604074200301	211DBG	63.00	83.00	P	N	19631011			230354
230347	SAYREVILLE W D	SWD TEST 1	SAYREVILLE BORO	402604	0742004	27.00	81.0		402604074200401	211DBG	71.00	81.00	P	N	19580908			230355
230348	SAYREVILLE W D	OBS WELL 101	SAYREVILLE BORO	402604	0742004	31.00	69.0		402604074200402	211DBG	58.00	69.00	U	T	1963			230356
230349	NJ WATER POLICY	NAT LEAD 6	SAYREVILLE BORO	402605	0741957	29.90	279		402605074195701	211FRNG	269.00	279.00	U	D	19680729			230357
230350	SAYREVILLE W D	OBS WELL 102	SAYREVILLE BORO	402605	0742108	9.00	23.0		402605074210801	211RTN	20.00	23.00	U	D	1968			230358
230351	SAYREVILLE W D	SWD 1	SAYREVILLE BORO	402608	0741955	30.40	277		402608074195501	211FRNG	267.00	277.00	U	D	19680904			230359
230352	SAYREVILLE W D	RECHARGE 1 M	SAYREVILLE BORO	402605	0741959	35.27	82.0		402608074195701	211DBG	76.00	82.00	U	D				230360
230353	SAYREVILLE W D	OBS WELL 103	SAYREVILLE BORO	402605	0741958	34.00	280		402609074195201	211FRNG	225.00	280.00	U	D	19670712			230361
230354	SAYREVILLE W D	SWD C	SAYREVILLE BORO	402611	0741955	35.20	273		402611074195501	211FRNG	262.00	273.00	U	D	19680819			230362
230355	SAYREVILLE W D	SWD A	SAYREVILLE BORO	402612	0742010	32.00	73.0		402612074201001	211DBG	60.00	73.00	U	Z	19581006			230363
			SAYREVILLE BORO	402614	0741950	30.00	82.0		402614074195001	211DBG	72.00	82.00	P	N	19690121			230364

GWSI

UNIQUE ID	SITE OWNER	LOCAL ID	MUNICIPALITY	LAT	LON	ALTITUDE	DEPTH	DIAMETER	STATION ID	AQUIFER	SCREENED INTERVAL		W	S	DATE	PERMIT	DEPTH DRILLED	UNIQUE ID
230680	ALLIED CHEMICAL CO	OBS 4	METUCHEN BORO	403129	0742152	111.3	24		403129074215201	211FRNG	20.5	24	U	O	19790622		25	230680
230681	ALLIED CHEMICAL CO	OBS 5	METUCHEN BORO	403127	0742157	119.7	29.1		403127074215701	211FRNG	25.6	29.1	U	O	19790623		29.1	230681
230682	ALLIED CHEMICAL CO	OBS 6	METUCHEN BORO	403128	0742159	120.4	28.9		403128074215901	211FRNG	23.9	28.9	U	O	19790623		28.9	230682
230683	ALLIED CHEMICAL CO	OBS 7	METUCHEN BORO	403130	0742158	112.1	23.2		403130074215801	211FRNG	22.2	23.2	U	O	19790623		23.2	230683
230685	MADISON IND	MADISON 2	OLD BRIDGE TWP	402559	0741943		37		402559074194301	211FRNG					19730727		42	230685
230687	MADISON IND	MADISON 4	OLD BRIDGE TWP	402601	0741938		37		402601074193801	211FRNG	17	37	U	O	19730727	29-8002	42	230687
230688	MADISON IND	MADISON 5	OLD BRIDGE TWP	402603	0741938				402603074193801	211FRNG	17	37	U	O	19730728	29-7999	42	230688
230689	MADISON IND	MADISON 6	OLD BRIDGE TWP	402600	0741930				402600074193001	211FRNG	17	37	U	O	19730729	29-7998	42	230689
230690	MADISON INDUSTRIES	P-1-1-1	OLD BRIDGE TWP	402606	0741936		49		402606074193601	211FRNG	44	49	U	O	19811209	28-12672	49	230690
230691	IBM CORP	BLDG 12-1	SOUTH BRUNSWICK TWP	402155	0742959		39	14	402606074193601	211DBG	29	39	U	O	19820128	28-12712	44	230691
230691		BLDG 12-1	SOUTH BRUNSWICK TWP	402155	0742959	105	215		402155074295901	211FRNG	122	130	U	O	19830803		215	230691
230691		BLDG 12-1	SOUTH BRUNSWICK TWP	402155	0742959	105	215		402155074295901	211FRNG	158	165	U	O			215	230691
230692	IBM CORP	BLDG 12-2	SOUTH BRUNSWICK TWP	402154	0742959	105	58		402155074295901	211FRNG	210	215	U	O			215	230691
230693	IBM CORP	BLDG 12-3	SOUTH BRUNSWICK TWP	402152	0743000	105	55		402154074295901	211FRNG	48	58	U	O	19830804		58	230692
230694	IBM CORP	BLDG 12-4	SOUTH BRUNSWICK TWP	402149	0742934	105	61		402152074300001	211FRNG	45	55	U	O	19830805		55	230693
230695	IBM CORP	BLDG 12-5	SOUTH BRUNSWICK TWP	402144	0742933	105	65		402149074293401	211FRNG	51	61	U	O	19830809		63	230694
230696	IBM CORP	BLDG 12-6	SOUTH BRUNSWICK TWP	402149	0743000	105	54		402144074293501	211FRNG	55	65	U	O	19830808		65	230695
230697	IBM CORP	GW 1	SOUTH BRUNSWICK TWP	402228	0743115	110	106		402149074300001	211FRNG	44	54	U	O	19830808		54	230696
230698	IBM CORP	GW 2	SOUTH BRUNSWICK TWP	402225	0743108	105			402228074311501	211FRNG	66	106	U	O	19780209	28-10146	112	230697
230699	IBM CORP	GW 3	SOUTH BRUNSWICK TWP	402228	0743116	111.0	37		402225074310801	211FRNG			U	Z	19780130		23	230698
230700	IBM CORP	GW 4	SOUTH BRUNSWICK TWP	402226	0743109	116.0	38		402228074311601	211FRNG	17	37	U	O	19780210	28-10181	41.5	230699
230701	IBM CORP	GW 5	SOUTH BRUNSWICK TWP	402225	0743058	110.0	97		402226074310901	211FRNG	15	38	U	O	19780217	28-10182	41.5	230700
230702	IBM CORP	GW 6	SOUTH BRUNSWICK TWP	402225	0743113	119.0	97		402225074311301	211FRNG	72	97	U	O	19780303	28-10241	104	230701
230703	IBM CORP	GW 7	SOUTH BRUNSWICK TWP	402226	0743109	109.5	38		402226074310902	211FRNG	18	38	U	O	19780222	28-10262	60	230702
230704	IBM CORP	IBM GW 8	SOUTH BRUNSWICK TWP	402225	0743124	102.1	90		402225074312401	211FRNG	50	90	U	O	19780314	28-10240	95	230703
230704		IBM GW 8	SOUTH BRUNSWICK TWP	402235	0743119	119.4	67	8	402234074311601	211FRNG	32	67	U	O	19780221	28-10185	78.5	230704
230705	IBM CORP	GW 9	SOUTH BRUNSWICK TWP	402235	0743119	119.4	67	6	402234074311601	211FRNG			U	O			78.5	230704
230706	IBM CORP	GW 10	SOUTH BRUNSWICK TWP	402225	0743124	102.1	45		402225074312402	211FRNG	10	45	U	O	19780316	28-10239	46.5	230705
230707	IBM CORP	GW 11	SOUTH BRUNSWICK TWP	402225	0743058	110.7	60.0		402225074305801	211FRNG	20	60	U	O	19780221	28-10183	61.5	230706
230708	IBM CORP	GW 12	SOUTH BRUNSWICK TWP	402225	0743059	110.0	48		402225074305901	211FRNG	13	48	U	O	19780301	28-10243	52	230707
230709	IBM CORP	GW 13	SOUTH BRUNSWICK TWP	402233	0743111	114.9	62		402233074311101	211FRNG	22	62	U	O	19780317	28-10258	64	230708
230710	IBM CORP	GW 14	SOUTH BRUNSWICK TWP	402227	0743058	110.0	110		402227074305801	211FRNG	53	110	U	O	19780309	28-10264	115	230709
230711	IBM CORP	GW 15	SOUTH BRUNSWICK TWP	402224	0743100	108.0	50.0		402226074310601	211FRNG	15	50	U	O	19780301	28-10265	31.5	230710
230712	IBM CORP	GW 16	SOUTH BRUNSWICK TWP	402227	0743058	110.2	49		402227074305802	211FRNG	20	49	U	O	19780307	28-10266	31.5	230711
230713	IBM CORP	GW 16-A	SOUTH BRUNSWICK TWP	402228	0743104	115			402228074310401	211FRNG	20		U	I	19780202	28-10189	31.5	230712
230714	IBM CORP	GW 16-B	SOUTH BRUNSWICK TWP	402228	0743104	115			402228074310402	211FRNG	20		U	I	19780202		30	230713
230715		IBM GW 17		402229	0743104	114.6	60		402229074310401	211FRNG	24	60	U	O	19780203		64.5	230714
230716	IBM CORP	GW 18	SOUTH BRUNSWICK TWP	402228	0743109	115.0			402228074310501	211FRNG								230715
230717	IBM CORP	GW 19	SOUTH BRUNSWICK TWP	402233	0743101	118.7	96		402233074310101	211FRNG	66	96	U	O	19780228	28-10268	115	230716
230718	IBM CORP	GW 21	SOUTH BRUNSWICK TWP	402228	0743105	113.0	50.0		402228074310502	211FRNG	15	30	U	O	19780215	28-10186	33.5	230717
230719	IBM CORP	GW 22	SOUTH BRUNSWICK TWP	402221	0743101	106.2	108		402221074310101	211FRNG	50	108	U	O	19780217	28-10187	109	230718
230720	IBM CORP	GW 23	SOUTH BRUNSWICK TWP	402221	0743101	106.1	47		402221074310102	211FRNG	12	47	U	O	19780213	28-10188	47.5	230719
230721	IBM CORP	GW 24	SOUTH BRUNSWICK TWP	402223	0743053	110.1	55.0		402223074305301	211FRNG	20	55	U	O	19780307	28-10270	36.5	230720
230722	IBM CORP	GW 25	SOUTH BRUNSWICK TWP	402228	0743104	113.0	60		402228074310403	211FRNG	20	60	U	O	19780203		62	230721
230723	IBM CORP	GW 26	SOUTH BRUNSWICK TWP	402230	0743058	113.1	58.0		402230074305801	211FRNG	13	58	U	O	19780206	28-10190	61.5	230722
230724	IBM CORP	GW 27	SOUTH BRUNSWICK TWP	402229	0743058	111.6	59		402229074305801	211FRNG	19	59	U	O	19780211	28-10191	60	230723
230725	IBM CORP	GW 28	SOUTH BRUNSWICK TWP	402233	0743113	116.3	64		402233074311301	211FRNG	24	64	U	O	19780227	28-10271	81	230724
230726	IBM CORP	GW 29	SOUTH BRUNSWICK TWP	402233	0743108	116.9	65		402233074310801	211FRNG	20	65	U	O	19780224	28-10272	73	230725
230727	ANHEUSER BUSCH	BUSCH 8	EAST BRUNSWICK TWP	402225	0743112	104.8	40		402225074311202	211FRNG	15	40	U	O	19780302	28-10273	42	230726
230728	ANHEUSER BUSCH	BUSCH 9	EAST BRUNSWICK TWP	402437	0742217	30.00	60.0	0.00	402437074221701	211FRNG	18.	28.	U	O	19761208		32.	230727
230729	ANHEUSER BUSCH	BUSCH 10	EAST BRUNSWICK TWP	402437	0742217	30.00	70.0	0.00	402437074221702	211FRNG	96.	120.	N	W	19810814	28-12025	121.	230728
230730	DUHERNAL W CO	DUHERNAL 26	OLD BRIDGE TWP	402442	0742208	25.0	60.0	0.00	402440074225701	211DBG	50.00	60.00	N	W	19830817	28-13669	72.0	230729
230731	DUHERNAL W CO	DUHERNAL 27	OLD BRIDGE TWP	402428	0742205	80.00	116	0.00	402428074220501	211DBG	101.00	116.00	N	W	19820630	28-12769	117	230730
230732		KULESA DOMESTIC	SOUTH BRUNSWICK TWP	402428	0742205	80.00	102	0.00	402428074220502	211DBG	81.30	102.00	N	W	19820402	28-12770	112	230731
230733	EDGEBORO DISPOSAL	EDGEBORO DSP LND	SOUTH RIVER BORO	402448	0743004	110.	40		402428074295501	211FRNG								230732
230734	MIRAMDL CHEMICAL	MIRAMDL CHEMICAL	SOUTH BRUNSWICK TWP	402741	0742324	20.0		287.625	402738074232701	211FRNG			H	W				230733
230735	PERTH AMBOY WATER DEPARTM	RUNYON AR	OLD BRIDGE TWP	402225	0743112	100.00	120	6.	402225074311201	211FRNG	18.	28.	U	O	19761208		32.	230734
230736	SIMONSON BROS	SIMONSON BROS DO	PLAINSBORO TWP	402524	0741940	10.0	88	30	402525074154801	211FRNG	96.	120.	N	W	19810814	28-12025	121.	230735
230738	ROSENSTOCK, WALTER	ROSENSTOCK DOMES	SOUTH BRUNSWICK TWP	402009	0743320	85.	78	4.	402006074331902	211FRNG	70	85	P	W	19841102	28-13353	80	230736
230739	SIYMANSKI, MICHAEL	SIYMANSKI DOMEST	SOUTH BRUNSWICK TWP	402310	0743123	90	39.	6.	402310074312301	211FRNG	71.	78.	H	W	19630800	28-05351	78.	230737
230740	DALLENBACH GRAVEL	DALLENBACH TRAIL	SOUTH BRUNSWICK TWP	402136	0743126	105	110	4.	402136074313501	211FRNG	35.	39.	H	W	19760124	28-01842	40.	230738
230741	SPERLING, ROYAL F	SPERLING ROYAL 1	EAST BRUNSWICK TWP	402258	0742747	90.	55	4.	402258074274701	211DBG	100.	110.	H	W	19830118	28-13267	110.	230739
230742	APPLEGATE, JAMES	APPLEGATE SIMONS	CRANBURY TWP	402242	0742559	55.	44	4.	402250074261301	211DBG	47.	55.	H	W	19811005	28-12332	61.	230740
230743	PERTH AMBOY WATER DEPARTM	RUNYON TW-PW1	OLD BRIDGE TWP	401957	0743203	85.0	60	4.	401957074320501	211DBG	41.	44.	H	W	19700302	28-06296	49.	230741
230744	PERTH AMBOY WATER DEPARTM	RUNYON TW-1	OLD BRIDGE TWP	402207	0742014	11.50	45.0	0.00	402207074201401	211DBG	30.	60.	H	W	19710902		60.	230742
230745	PERTH AMBOY WATER DEPARTM	RUNYON TW-2	OLD BRIDGE TWP	402208	0742038	13.50	75.0	0.00	402208074203801	211DBG	30.00	45.00	P	W	19840615		45.0	230743
230746	PERTH AMBOY WATER DEPARTM	RUNYON TW-3	OLD BRIDGE TWP	402207	0742034	13.50	48.5	0.00	402207074203401	211DBG	60.00	75.00	U	O	19840701		75.0	230744
230747	PERTH AMBOY WATER DEPARTM	RUNYON TW-4	OLD BRIDGE TWP	402206	0742033	13.50	48.5	0.00	402206074203301	211DBG	38.50	48.50	U	O	19840707		48.5	230745
230748	PERTH AMBOY WATER DEPARTM	RUNYON TW-PW2	OLD BRIDGE TWP	402204	0742032	13.50	48.0	0.00	402204074203201	211DBG	38.00	48.00	U	O	19840707		48.0	230746
230749	PERTH AMBOY WATER DEPARTM	RUNYON TW-14	OLD BRIDGE TWP	402414	0742040	10.00	90.0	0.00	402444074204001	211DBG	75.00	90.00	P	W	19840716		91.0	230747
230750	PERTH AMBOY WATER DEPARTM	RUNYON TW-15	OLD BRIDGE TWP	402414	0742040	10.00	75.0	0.00	402444074204001	211DBG	45.00	75.00	U	O	19840702		84.5	230748
230751	PERTH AMBOY WATER DEPARTM	RUNYON TW-16	OLD BRIDGE TWP	402414	0742038	10.00	90.0	0.00	402447074203601	211DBG	80.00	90.00	U	O	19840723		92.0	230749
230752	PROTNICK, MICHAEL	CRANBURY TWP	CRANBURY TWP	401930	0742046	10.00	57.0	0.00	402449074204401	211DBG	52.00	57.00	U	O	19840628		62.0	230750
230753	ARONSON & GREENBERG	CRANBURY TWP	CRANBURY TWP	401930	0742910	110.00	170	0.00	401950074293001	211DBG	70.00	170.00	I	W	19810512	28-12272	180	230751
230754	MURPHY, RICHARD	MURPHY 1	CRANBURY TWP	401728	0743124	80.00	130	0.00	401728074312401	211PRPA	80.00	130.00	I	W	19810612	28-12289	130	230752
230755	WILLIAMS, MICHAEL	WILLIAMS 1	MONROE TWP	401748	0743111	100.00	130	0.00	401748074311101	211DBG	120.00	130.00	H	W	19731007	28-08200	135	230753
230756	FALTER, EDWARD	FALTER 1	MONROE TWP	401910	0742311	170.00	180	0.00	401910074231101	211DBG	170.00	180.00	H	W	19791120	28-11494	180	230754
230757	CORSE, DOROTHY	CORSE 1	JAMESBURG BORO	401825	0742453	70.00	175	0.00	401825074245301	211DBG	170.00	175.00	H	W	19740501	28-08344	175	230755
230758	TARINO, ANGELO	TARINO 1	MONROE TWP	402102	0742537	80.00	113	0.00	402102074253701	211DBG	110.00	113.00	H	W	19770104	28-09466	114	230756
230759	BROWN, DORIS	BROWN 1	MONROE TWP	402208	0742718	100.00	49.0	0.00	402208074271801	211DBG	46.00	49.00	H	W	19740427	28-01214	55.0	230757
230760	OLNA, FRANK	OLNA 1	MONROE TWP	401824	0742848	120.00	256	4.00	401824074284801	211DBG	230.00	256.00	H	W	19820603	28-12941	274	230758
230761	WILDEN, JOHANNES	WILDEN 1	MONROE TWP	401903	0742240	160.00	360	0.00	401903074224001	211FRNG	350.00	360.00	H	W	19830427	28-13424	360	230759
230762	SHOVEY, JAMES	SHOVEY 1	OLD BRIDGE TWP	401804	0742318	70.00	285	0.00	401804074231801	211DBG	275.00	285.00	H	W	19830718	28-13536	287	230760
230763	STILES, LEW	STILES 1	OLD BRIDGE TWP	402030	0742152	55.00	184	0.00	402030074215201	211DBG	178.00	184.00	H	W	19830808	28-13649	193	230761
230764	EHLER, MARY	EHLER 1	OLD BRIDGE TWP	402510	0741652	100.00	175	0.00	402510074165201	211DBG	171.00	175.00	H	W	19760729	27-08488	177	230762
230765	JORDAN, ANTHONY	JORDAN 1	OLD BRIDGE TWP	402422	0741824	40.00	140	0.00	402422074182401	211DBG	134.00	140.00	H	W	19801002	28-10831	140	230763
230766	SOUTH OLD BRIDGE FD	ENGINE 3	OLD BRIDGE TWP	402157	0741937	110.00	236	4.00	402157074193701	211DBG	230.00	236.00	H	W	19840711	28-12871	247	230764
230767	OLSRYS, RICHARD	OLSRYS 1	MONROE TWP	402127	0742214	80.00	180	0.00	402127074221401	211DBG	172.00	180.00	U	W	19730508	28-08724	180	230765
230768	ETSCH, ROY	OHD 1 OBS	JAMESBURG BORO	402039	0742558	60.00	186	0.00	402039074255801	211DBG	181.00	186.00	H	W	19780316	28-10201	186	230766
230769	MILADINOV, ELIJA	MILADINOV 1	MONROE TWP	401914	0742326	185.00	58.0	0.00	401914074232601	211EGLS	38.00	58.00	U	O	19820916	28-13095	60.0	230767
230770	JURGELSKY, FRANK	HOUSE WELL	MONROE TWP	401728	0742504	120.00	234	0.00	401728074250401	211DBG	228.00	234.00	H	W	19820303	28-12772	240	230768
				401618	0742500	140.00	325	0.00	401618074250001	211DBG	315.00	325.00	H	W	19820423	28-12877	325	230769
																		230770

REFERENCE NO. 23

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-8906-45	8/10/89	1045

DISTRIBUTION:

Whittaker, - North Brunswick Coatings and Chemicals a Division of

BETWEEN:	OF: PLANT Engineer	PHONE:
Frank Falco	Middlesex Water Co.	(201) 634-1500

AND:

John Reckhoff NUS

DISCUSSION:

RE: Sources of Water Supply

According to Frank

3 well fields in South Plainfield

Spring Lake St.

Maple Avenue

Sprague St.

2 well fields in Edison North Tingley Lane

& South Tingley Lane

1 surface water intake located

on the Delaware + Raritan Canal

adjacent to Rte 18 in New Brunswick

near Rutgers University

No water is obtained from any other sources

ACTION ITEMS:

Each field has a mixing plant on site and distributes from there. No system wide mixing takes place.

NUS 067 REVISED 0685

REFERENCE NO. 24

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-8906-21	7/25/89	1030

DISTRIBUTION:

Blonder-Tongue Laboratories, Inc.

BETWEEN:	OF:	PHONE:
MR. LANGENOHL	Director of Mun. Utilities Perth Amboy Water Department	(201) 826-0290

AND:

John D Rockhoff NUS

DISCUSSION:

RE: Runyon Wellfield and population served.

Mr Langenohl stated that the wells that Perth Amboy owns in the Runyon Watershed serves the following communities

Perth Amboy approx. 38,000 people
South Amboy " 20,000 "
Old Bridge Township > potential supplies
Sayreville

based on rights granted to be used in drought and emergency conditions

ACTION ITEMS:

REFERENCE NO. 25

NUS CORPORATION — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
	7-14-89	1000

DISTRIBUTION: ERDA - New Brunswick Lab 02-8812-08

BETWEEN:	OF:	PHONE:
Mr. Vieser	Elizabethtown Water Company	(201) 654-1234

AND: Joseph Djorak (NUS)

DISCUSSION:

Elizabethtown Water Co. gets its water from ground water & surface water supplies. Approximately 15% of their water comes from ground water and the remaining 85% from surface water.

The groundwater comes from approximately 150 wells scattered throughout the distribution area. Mr. Vieser did not believe that any of the wells were located within ½ of a mile of the Raritan River in the vicinity of New Brunswick.

The surface water supplies come from the Raritan River, the Delaware and Raritan Canal, and the Millstone River. The majority of the water comes from the Delaware River, and the Millstone River is used only in emergencies. Three surface water intakes are located on the Delaware River, one is approx. ½ mile above the confluence of the Delaware and Millstone Rivers, and the other two are located right upstream of the confluence of the two rivers on the east and west bank. One surface water intake is located on the Millstone River right upstream of the confluence of the Millstone and the Delaware Rivers on the east bank, and the last surface water intake is located on the Delaware and Raritan Canal approx. ¼ mile downstream of the confluence of the two rivers on the north side of the canal.

ACTION ITEMS:

REFERENCE NO. 26

02-8812-08

NUS CORPORATION AND SUBSIDIARIES — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
	7-14-89	1100

DISTRIBUTION:
ERDA - New Brunswick Lab. 02-8812-08

BETWEEN:	OF:	PHONE:
Matt Bolyn, Superintendent	Edison Twp. Water Department	(201) 287-0900

AND:
Joseph Duovalc

DISCUSSION:
Edison Twp. Water Department Purchases all of their water from Elizabethtown Water Co. and Middlesex Water Co.

ACTION ITEMS:

NUS 067 REVISED 0685

REFERENCE NO. 27

NUS CORPORATION — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
02-9512-01	6/19/86	1120

DISTRIBUTION: File (Heller Properties)

BETWEEN:	OF:	PHONE:
City Engineer	Township of Edison	(201) 287-0900

AND: D-LAMOND (NUS)

DISCUSSION:

Water supply for Edison. There are several public supply wells located in Edison however they are not utilized except in an emergency as backup supplies. Water in Edison just distributes water from the Elizabethtown Water Co. There are other wells in area (private wells) which are used for irrigation ~~and~~, industry and monitoring.

ACTION ITEMS:

REFERENCE NO. 28

NUS CORPORATION

TITLE: THREE MILE VICINITY MAP

SITE :

OAKITE PRODUCTS, INC.,
METUCHEN, N.J.

DATE : 07/26/89

TDD : 02-8906-10

QUAD : PERTH AMBOY, N.J.

FIGURE NUMBER:

SCALE: 1"= 2000'

REFERENCE NO. 29

NUS CORPORATION — **TELECON NOTE**

CONTROL NO:	DATE:	TIME:
	8-17-89	1000

DISTRIBUTION: Oakite Products, Inc. 02-8906-10

BETWEEN:	OF:	PHONE:
Mr. Van, City Engineer	Metuchen Dept. of Public Works	(201) 632-8520

AND: Joseph Dvorak (NUS)

DISCUSSION:

I asked Mr. Van if he knew where the storm drains in the vicinity of the intersection of Central Ave and Rt 27 discharge. He said the storm drains along Rt 27 in that vicinity run towards the point where the railroad crosses Rt 27 where they hook up to a large main. The large main runs west parallel to the railroad. It discharges into the Dismal Swamp approximately 2500' from the intersection of the railroad and Rt 27.

JD 8-17-89

ACTION ITEMS:

REFERENCE NO. 30

SURFACE WATER QUALITY STANDARDS

N.J.A.C. 7:9-4.1 et seq.

May 1985

New Jersey Department of Environmental Protection/Division of Water Resources

DEPARTMENT OF ENVIRONMENTAL PROTECTION
DIVISION OF WATER RESOURCES

Surface Water Quality Standards

Adopted:	April 29, 1985 by Robert E. Hughey, Commissioner, Department of Environmental Protection
Authority:	N.J.S.A. 13:1D-1 et seq., 58:10A-1 et seq., and 58:11A-1 et seq.
Effective Date:	May 20, 1985
Expiration Date pursuant to Executive Order No.66 (1978):	May 20, 1990

DATE 4/29/85

Robert E. Hughey

ROBERT E. HUGHEY, Commissioner
Department of Environmental Protection

(c) In all FW2 waters the designated uses are:

1. Maintenance, migration and propagation of the natural and established biota;

2. Primary and secondary contact recreation;

3. Industrial and agricultural water supply;

4. Public potable water supply after such treatment as required by law or regulation; and

5. Any other reasonable uses.

(d) In all SE1 waters the designated uses are:

1. Shellfish harvesting in accordance with N.J.A.C. 7:12;

2. Maintenance, migration and propagation of the natural and established biota;

3. Primary and secondary contact recreation; and

4. Any other reasonable uses.

(e) In all SE2 waters the designated uses are:

1. Maintenance, migration and propagation of the natural and established biota;

2. Migration of diadromous fish;

3. Maintenance of wildlife;

4. Secondary contact recreation; and

5. Any other reasonable uses.

(f) In all SE3 waters the designated uses are:

1. Secondary contact recreation;

2. Maintenance and migration of fish populations;

3. Migration of diadromous fish;

4. Maintenance of wildlife; and

5. Any other reasonable uses.

(g) In all SC waters the designated uses are:

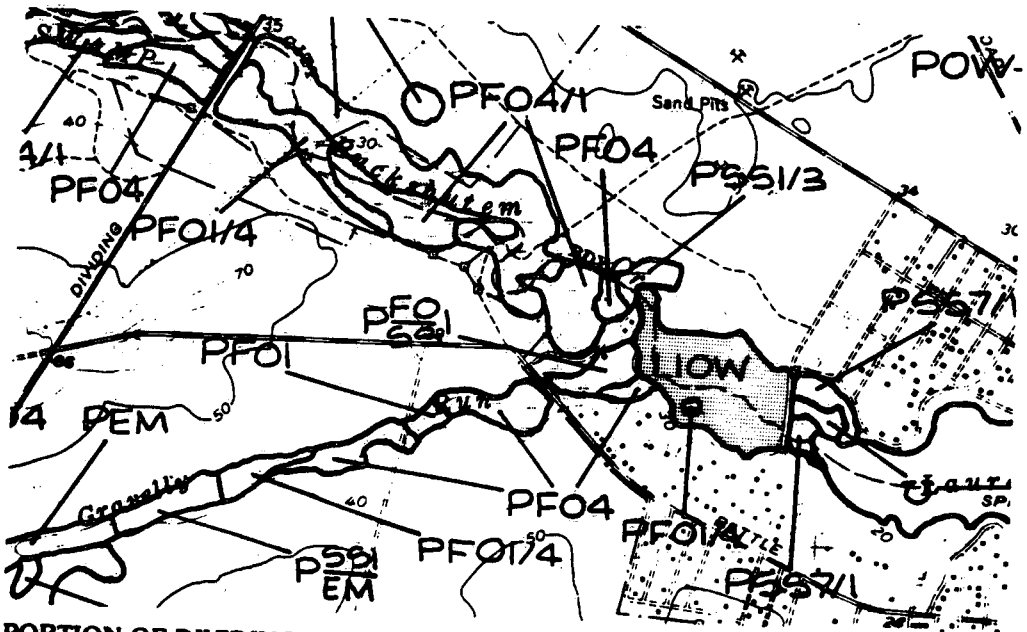
1. Shellfish harvesting in accordance with N.J.A.C. 7:12;

INDEX E - Surface Water Classifications of the Raritan River and Raritan Bay Basin

ALLERTON CREEK (Allerton) - Entire length	FW2-NT
AMBROSE BROOK (Piscataway) - Entire length	FW2-NT
AMWELL LAKE (Snydertown)	FW2-NT(C1)
ASSISCONG CREEK (Flemington) - Entire length	FW2-NT
BACK BROOK (Vanliew's Corners) - Entire length	FW2-NT
BALDWINS CREEK	
(Pennington) - Entire length, except segment described separately below	FW2-NT
(Baldwin) - Segment within the boundaries of Baldwin Lake Wildlife Management Area	FW2-NT(C1)
BARCLAY BROOK (Redshaw Corners) - Entire length	FW2-NT
BEAVER BROOK	
(Cokesbury) - Source to Reformatory Road bridge	FW2-TP(C1)
(Annandale) - Reformatory Rd. bridge to Raritan River, South Branch	FW2-TM
BEDEN BROOK (Montgomery) - Entire length	FW2-NT
BIG BEAR BROOK (West Windsor) - Entire length	FW2-NT
BIG BROOK (Vanderberg) - Entire length	FW2-NT
BLACK BROOK (Polktown) - Entire length	FW2-TP(C1)
BLACK RIVER - See LAMINGTON RIVER	
BLACKBERRY CREEK	
(Oceanport) - Source to a line beginning on the easternmost extent of Gooseneck Point and bearing approximately 162 degrees True North to its terminus on the westernmost extent of an unnamed point of land in the vicinity of the western extent of Cayuga Ave. in Oceanport	SE1
(Oceanport) - Creek below the line described above	SE1
BLUE BROOK (Mountainside) - Entire length	FW2-NT
BOULDER HILL BROOK (Tewksbury) - Entire length	FW2-TP(C1)
BOUND BROOK (Dunellen) - Entire length	FW2-NT
BRANCHPORT CREEK	
(Long Branch) - Source to a line beginning on the northernmost extent of an unnamed point of land lying north of Pocano Ave. in Oceanport and bearing approximately 055 degrees True North to its terminus on the westernmost extent of the northern bulkhead at the lagoon located between France Rd. and Lori Rd. in Monmouth Beach	FW2-NT/SE1
(Monmouth Beach) - Creek below line described above	SE1(C1)
BUDD LAKE (Mt. Olive)	FW2-NT(C1)
BURNETT BROOK (Ralston) - Entire length	FW2-TP(C1)
CAPOOLONG CREEK (Sydney) - Entire length	FW2-TP(C1)
CEDAR BROOK (Spotswood) - Entire length	FW2-NT
CHAMBERS BROOK (Whitehouse) - Entire length	FW2-NT
CHEESEQUAKE STATE PARK WATERS (S. Amboy) - Fresh waters within the park upstream of the limits of tidal influence	FW2-NT(C1)

REFERENCE NO. 31

ATLAS
OF
NATIONAL WETLANDS INVENTORY MAPS
FOR
NEW JERSEY



PORTION OF DIVIDING CREEK MAP

SCALE: 1:24,000

UNITED STATES
DEPARTMENT OF THE INTERIOR
Fish and Wildlife Service
Region Five
Habitat Resources
One Gateway Center, Suite 700
Newton Corner, Massachusetts

1984

ATLAS OF

NATIONAL WETLANDS INVENTORY MAPS

FOR NEW JERSEY

Ralph W. Tiner, Jr.
Regional Wetland Coordinator
U.S. Fish and Wildlife Service
Region 5
1 Gateway Center, Suite 700
Newton Corner, MA 02158

February 1984

HOW TO USE THIS ATLAS

The Atlas contains reductions of all 1:24,000 National Wetlands Inventory maps. Maps appear in alphabetical order. Map names can be located on the index map (Figure 2). Each map shows the configuration, location and type of wetlands and deepwater habitats found within a given area.

WETLAND LEGEND

Wetland data are displayed on maps by a series of letters and numbers (alpha-numerics). Mixing of classes and subclasses are represented by a diagonal line. The more common symbols are shown below; less common symbols have been omitted for simplicity. For identifying these latter symbols, the reader should refer to an actual NWI map legend.

Examples of Alpha-numerics:

E2EMN6	=	Estuarine (E), Intertidal(2), Emergent Wetland(EM), Regularly Flooded(N), Oligohaline(6)
E2FL	=	Estuarine(E), Intertidal(2), Flat(FL)
PF01	=	Palustrine(P), Forested Wetland(FO), Broad-leaved Deciduous(1)
PEM/OW	=	Palustrine(P), Emergent Wetland/Open Water(EM/OW)
PFO/SS1	=	Palustrine(P), Forested Wetland/Scrub-Shrub Wetland(FO/SS), Broad-leaved Deceduous(1)

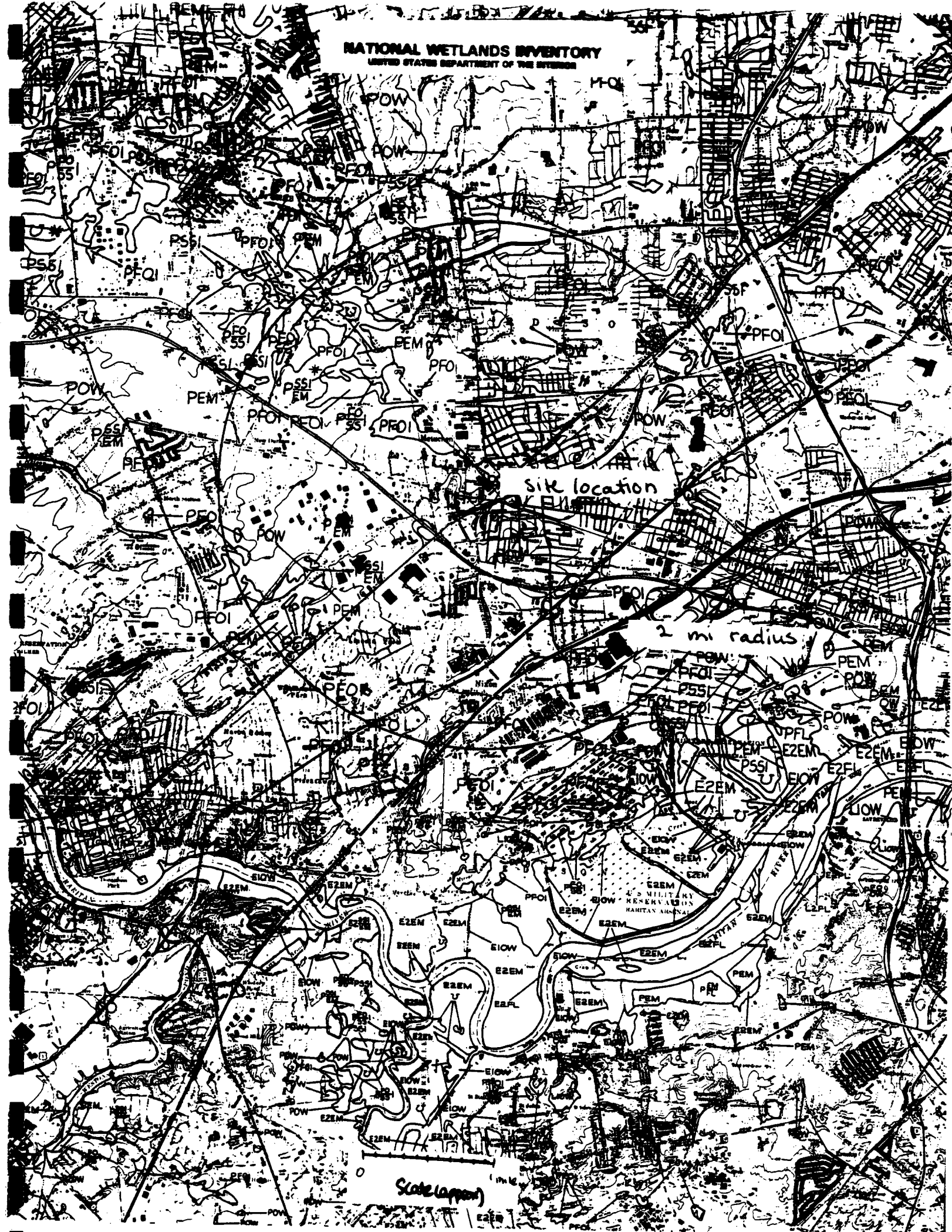
SYMBOLOGY

Systems and Subsystems:

M 1	=	Marine Subtidal	R 3	=	Riverine Upper Perennial
M 2	=	Marine Intertidal	R 4	=	Riverine Intermittent
E 1	=	Estuarine Subtidal	L 1	=	Lacustrine Limnetic
E 2	=	Estuarine Intertidal	L 2	=	Lacustrine Littoral
R 1	=	Riverine Tidal	P	=	Palustrine
R 2	=	Riverine Lower Perennial	U	=	Upland

Classes (subclasses and modifers designated where appropriate):

AB	=	Aquatic Bed
BB	=	Beach/Bar
EM	=	Emergent Wetland
EMN6	=	Emergent Wetland, Regularly Flooded, Oligohaline
EMP6	=	Emergent Wetland, Irregularly Flooded, Oligohaline
EMR	=	Emergent Wetland, Seasonally Flooded-Tidal
FL	=	Flat
FO1	=	Forested Wetland, Broad-leaved Deciduous
FO2	=	Forested Wetland, Needle-leaved Deciduous
FO4	=	Forested Wetland, Needle-leaved Evergreen
OW	=	Open Water/Unknown Bottom
SS1	=	Scrub=Shrub Wetland, Broad-leaved Deciduous
SS3	=	Scrub-Shrub Wetland, Broad-leaved Evergreen
SS4	=	Scrub-Shrub Wetland, Needle-leaved Evergreen
SS5	=	Scrub-Shrub Wetland, Dead
SS7	=	Scrub-Shrub Wetland, Evergreen


NATIONAL WETLANDS INVENTORY
site location
2 mi radius
0
Scale (approx)

REFERENCE NO. 32

Endangered and Threatened Wildlife in New Jersey

Endangered species are those whose prospects for survival in the state are in immediate danger because of a loss or change of habitat, over-exploitation, predation, competition or disease. Immediate assistance is needed to prevent extinction.

Threatened species are those who may become endangered if conditions surrounding the species begin or continue to deteriorate.

FISH

Endangered

Shortnose Sturgeon*

Threatened

Atlantic Sturgeon
American Shad
Brook Trout
Atlantic Tomcod

AMPHIBIANS

Endangered

Tremblay's Salamander
Blue-spotted Salamander
Eastern Tiger Salamander
Pine Barrens Treefrog
Southern Gray Treefrog

Threatened

Long-tailed Salamander
Eastern Mud Salamander

REPTILES

Endangered

Corn Snake
Bog Turtle
Timber Rattlesnake
Atlantic Hawksbill Turtle*
Atlantic Loggerhead Turtle*
Atlantic Ridley Turtle*
Atlantic Leatherback Turtle*

Threatened

Wood Turtle
Northern Pine Snake
Atlantic Green Turtle

Continued

Endangered and Nongame Species Program

List Established: December 19, 1974
List Revised: March 29, 1979 ★ January 17, 1984 ★ May 6, 1985
July 20, 1987

New Jersey Department of Environmental Protection • Division of Fish, Game & Wildlife

BIRDS

Endangered

Pied-billed Grebe†
Cooper's Hawk
Northern Harrier†
Bald Eagle*
Peregrine Falcon*
Piping Plover
Upland Sandpiper
Least Tern
Roseate Tern
Black Skimmer
Short-eared Owl†
Cliff Swallow†
Sedge Wren
Henslow's Sparrow
Vesper Sparrow†
Loggerhead Shrike

Threatened

Osprey
Red-shouldered Hawk
Northern Goshawk
Great Blue Heron
Yellow-crowned Night Heron
Barred Owl
Red-headed Woodpecker
Bobolink
Savannah Sparrow
Ipswich Sparrow
Grasshopper Sparrow
American Bittern†
Black Rail

MAMMALS

Endangered

Sperm Whale*
Blue Whale*
Finback Whale*
Sei Whale*
Humpback Whale*
Right Whale*

*(*Indicates Federal and State endangered status.)*
(†only Breeding population endangered)

PERSPECTIVE

Species are listed as endangered when record of past and present population indicate that the species is on the decline. Habitat—that place that animals need to live—is ever changing and when habitats change, some species survive and others decline. In New Jersey habitat change is partially responsible for the decline of 54 endangered and threatened species. The Endangered and Nongame Species Program is responsible for protecting these species found in the state.

WE NEED YOUR HELP

Reports of sightings of endangered and threatened species are welcome! When you observe any species listed, jot down the date, time, exact location and any behavioral observations and send to CN 400, Trenton, NJ 08625. Your contributions to the Endangered and Nongame Wildlife Conservation Fund on your NJ Income Tax form continue to make endangered species protection possible.

HABITAT & REPRODUCTION = SURVIVAL

DEFINITION OF ACRONYMS

FEDERAL STATUS

LE=listed endangered.
LT=listed threatened.
PE=proposed endangered.
PT=proposed threatened.
C2=candidate for listing.

STATE STATUS

LE=listed as endangered. (short-eared owl wintar pop. listed as stable:S)
LT=listed as threatened.

COUNTY OCCURRENCE

Y=present year-round, breeds.
N=present year-round, not recorded breeding.
B=present during the summer, breeds.
W=present during the winter.
T=present as a transient.
?=present status undetermined.
*=indicates that the county is within the species known breeding range.

5\18\87

NEW JERSEY NATURAL HERITAGE PROGRAM
POTENTIAL THREATENED AND ENDANGERED SPECIES
IN MIDDLESEX COUNTY

AMERICAN BITTERN — FEDERAL STATUS: — COUNTY
BOTAURUS LENTIGINOSUS — STATE STATUS: LT — OCCURRENCE: Y

HABITAT COMMENTS
Fresh water bogs, swamps, wet fields, cattail and bulrush marshes, brackish and saltwater marshes and meadows.

BARRED OWL — FEDERAL STATUS: — COUNTY
STRIX VARIA — STATE STATUS: LT — OCCURRENCE: ?

HABITAT COMMENTS
Dense woodland and forest (conif. or hardwood), swamps, wooded river valleys, cabbage palm-live oak hammocks, especially where bordering streams, marshes, and meadows.

BOBOLINK — FEDERAL STATUS: — COUNTY
DOLICHONYX ORYZIVORUS — STATE STATUS: LT — OCCURRENCE: ?

HABITAT COMMENTS
Tall grass areas, flooded meadows, prairie, deep cultivated grains, alfalfa and clover fields. In migration and winter also in rice fields, marshes, and open woody areas.

BOG TURTLE — FEDERAL STATUS: C2 — COUNTY
CLEMMYS MUHLENBERGII — STATE STATUS: LE — OCCURRENCE: ?

HABITAT COMMENTS
Slow, shallow rivulets of sphagnum bogs, swamps, and marshy meadows; sea level to 1200 m in Appalachians. Commonly basks on tussocks in morning in spring and early summer. Hibernates in subterreanean rivulet or seepage area.

COOPER'S HAWK — FEDERAL STATUS: — COUNTY
ACCIPITER COOPERII — STATE STATUS: LE — OCCURRENCE: W*

HABITAT COMMENTS
Primarily mature forest, either broadleaf or coniferous, mostly the former; also open woodland and forest edge.

GREAT BLUE HERON — FEDERAL STATUS: — COUNTY
ARDEA HERODIAS — STATE STATUS: LT — OCCURRENCE: N*

HABITAT COMMENTS
Freshwater and brackish marshes, along lakes, rivers, bays, lagoons, ocean beaches, mangroves, fields, and meadows.

HENSLOW'S SPARROW — FEDERAL STATUS: — COUNTY
AMMODRAMUS HENSLOWII — STATE STATUS: LE — OCCURRENCE: ?

HABITAT COMMENTS
Open fields and meadows with grass interspersed with weeds or shrubby vegetation, especially in damp or low-lying areas. In migration and winter also in grassy areas adjacent to pine woods or second-growth woodland.

LONGTAIL SALAMANDER — FEDERAL STATUS: — COUNTY
EURYCEA LONGICAUDA — STATE STATUS: LT — OCCURRENCE: ?

HABITAT COMMENTS
Streamsides, spring runs, cave mouths, forested floodplains in South. May disperse into wooded terrestrial habitats in wet weather. Hides under rocks, logs, and other debris.

NORTHERN HARRIER — FEDERAL STATUS: — COUNTY
CIRCUS CYANEUS — STATE STATUS: LE — OCCURRENCE: Y

HABITAT COMMENTS
Marshes, meadows, grasslands, and cultivated fields. Perches on ground or on stumps or posts.

PEREGRINE FALCON — FEDERAL STATUS: LE — COUNTY
FALCO PEREGRINUS — STATE STATUS: LE — OCCURRENCE: Y

HABITAT COMMENTS
"A variety of open situations from tundra, moorlands, steppe and seacoasts, especially where there are suitable nesting cliffs, to high mountains, more open forested regions, and even human population centers...".

PIED-BILLED GREBE — FEDERAL STATUS: — COUNTY
PODILYMBUS PODICEPS — STATE STATUS: LE — OCCURRENCE: ?

HABITAT COMMENTS
Lakes, ponds, sluggish streams, and marshes; in migration and in winter also in brackish bays and estuaries.

PINE BARRENS TREEFROG — FEDERAL STATUS: C2 — COUNTY
HYLA ANDERSONII — STATE STATUS: LE — OCCURRENCE: ?

HABITAT COMMENTS
Streams, ponds, cranberry bogs, and other wetland habitats. Post-breeding habitat the surrounding woodlands.

SAVANNAH SPARROW	FEDERAL STATUS:	COUNTY
PASSERCULUS SANDWICHENSIS	STATE STATUS: LT	OCCURRENCE: W*

HABITAT COMMENTS
"Open areas, especially grasslands, tundra, meadows, bogs, farmlands, grassy areas with scattered bushes, and marshes, including salt marshes in the BELDINGI and ROSTRATUS groups (Subtropical and Temperate zones)".

SHORT-EARED OWL	FEDERAL STATUS:	COUNTY
ASIO FLAMMEUS	STATE STATUS: LE/S	OCCURRENCE: W*

HABITAT COMMENTS
Open country, including prairie, meadows, tundra, moorlands, marshes, savanna, dunes, fields, and open woodland. Roosts by day on ground or on low open perches.

UPLAND SANDPIPER	FEDERAL STATUS:	COUNTY
BARTRAMIA LONGICAUDA	STATE STATUS: LE	OCCURRENCE: B

HABITAT COMMENTS
Grasslands, especially prairies, dry meadows, pastures, and (in Alaska) scattered woodlands at timberline; very rarely in migration along shores and mudflats.

WOOD TURTLE	FEDERAL STATUS:	COUNTY
CLEMMYS INSCULPTA	STATE STATUS: LT	OCCURRENCE: Y

HABITAT COMMENTS
Vicinity of streams and rivers. In streams and in wooded areas and fields adjacent to streams in summer. In streams in spring and fall. Hibernates in banks or bottoms of streams in winter.

REFERENCE NO. 33

Endangered & Threatened Wildlife and Plants

APRIL 10, 1987

50 CFR 17.11 & 17.12

Title 50—Wildlife and Fisheries

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

* * * * *

Subpart B—Lists

Source: 48 FR 34182, July 27, 1983, unless otherwise noted.

§ 17.11 Endangered and threatened wildlife.

(a) The list in this section contains the names of all species of wildlife which have been determined by the Services to be Endangered or Threatened. It also contains the names of species of wildlife treated as Endangered or Threatened because they are sufficiently similar in appearance to Endangered or Threatened species (see § 17.50 *et seq.*).

(b) The columns entitled "Common Name," "Scientific Name," and "Vertebrate Population Where Endangered or Threatened" define the species of wildlife within the meaning of the Act. Thus, differently classified geographic populations of the same vertebrate subspecies or species shall be identified by their differing geographic boundaries, even though the other two columns are identical. The term "Entire" means that all populations throughout the present range of a vertebrate species are listed. Although common names are included, they cannot be relied upon for identification of any specimen, since they may vary greatly in local usage. The Services shall use the most recently accepted scientific name. In cases in which confusion might arise, a synonym(s) will be provided in parentheses. The Services shall rely to the extent practicable on the *International Code of Zoological Nomenclature.*

(c) In the "Status" column the following symbols are used: "E" for Endangered, "T" for Threatened, and "E [or T] (S/A)" for similarity of appearance species.

(d) The other data in the list are nonregulatory in nature and are provided for the information of the reader. In the annual revision and compilation of this title, the following information may be amended without public notice: the spelling of species' names, historical range, footnotes, references to certain other applicable portions of this title, synonyms, and more current names. In any of these revised entries, neither the species, as defined in paragraph (b) of this section, nor its status may be changed without following the procedures of Part 424 of this title.

(e) The "historic range" indicates the known general distribution of the species or subspecies as reported in the current scientific literature. The present distribution may be greatly reduced from this historic range. This column does not imply any limitation on the application of the prohibitions in the Act or implementing rules. Such prohibitions apply to all individuals of the species, wherever found.

(f)(1) A footnote to the **Federal Register** publication(s) listing or reclassifying a species is indicated under the column "When listed." Footnote numbers to §§ 17.11 and 17.12 are in the same numerical sequence, since plants and animals may be listed in the same **Federal Register** document. That document, at least since 1973, includes a statement indicating the basis for the listing, as well as the effective date(s) of said listing.

(2) The "Special rules" and "Critical habitat" columns provide a cross reference to other sections in Parts 17, 222, 226, or 227. The "Special rules" column will also be used to cite the special rules that describe experimental populations and determine if they are essential or nonessential. Separate listing will be made for experimental populations, and the status column will include the following symbols: "XE" for an essential experimental population and "XN" for a nonessential experimental population. The term "NA" (not applicable) appearing in either of these two columns indicates that there are no special rules and/or critical habitat for that particular species. However, all other appropriate rules in Parts 17, 217–227, and 402 still apply to that species. In addition, there may be other rules in this Title that relate to such wildlife, e.g., port-of-entry requirements. It is not intended that the references in the "Special rules" column list all the regulations of the two Services which might apply to the species or to the regulations of other Federal agencies or State or local governments.

(g) The listing of a particular taxon includes all lower taxonomic units. For example, the genus *Hylobates* (gibbons) is listed as Endangered throughout its entire range (China, India, and SE Asia); consequently, all species, subspecies, and populations of that genus are considered listed as Endangered for the purposes of the Act. In 1978 (43 FR 6230–6233) the species *Haliaeetus leucocephalus* (bald eagle) was listed as Threatened in "USA (WA, OR, MN, WI, MI)" rather than its entire population; thus, all individuals of the bald eagle found in those five States are considered listed as Threatened for the purposes of the Act.

(h) The "List of Endangered and Threatened Wildlife" is provided below:

Editorial Note: This is a compilation and special reprint of 50 CFR 17.11 and 17.12 and is current as of the date shown on the cover. Minor changes and corrections to the October 1, 1986, compilation of 50 CFR have been incorporated in this printing, as well as all published final rules that have subsequently appeared in the **Federal Register**. Otherwise no entry in these lists has been significantly affected. This list has been prepared by the staff of the Office of Endangered Species, U.S. Fish and Wildlife Service, Washington, D.C. 20240. Readers are requested to advise the Service of any errors in this list. Copies are available from the Publication Unit, US Fish and Wildlife Service, Washington, D.C. 20240.

Species		Historic range	Vertebrate population where endangered or threatened	Status	When listed	Critical habitat	Special rules
Common name	Scientific name						
Eagle, Greenland white-tailed	*Haliaeetus albicilla groenlandicus*	Greenland and adjacent Atlantic islands	do	E	15	NA	NA
Eagle, harpy	*Harpia harpyja*	Mexico south to Argentina	do	E	15	NA	NA
Eagle, Philippine (=monkey-eating)	*Pithecophaga jefferyi*	Philippines	do	E	3	NA	NA
Eagle, Spanish imperial	*Aquila heliaca adalberti*	Spain, Morocco, Algeria	Entire	E	3	NA	NA
Egret, Chinese	*Egretta eulophotes*	China, Korea	do	E	3	NA	NA
Falcon, American peregrine	*Falco peregrinus anatum*	Nests from central Alaska across north-central Canada to central Mexico, winters south to South America.	do	E	2, 3, 145	17.95(b)	NA
Falcon, Arctic peregrine	*Falco peregrinus tundrius*	Nests from northern Alaska to Greenland; winters south to Central and South America.	do	T	2, 3, 145	NA	NA
Falcon, Eurasian peregrine	*Falco peregrinus peregrinus*	Europe, Eurasia south to Africa and Mideast.	do	E	15	NA	NA
Falcon, northern aplomado	*Falco femoralis septentrionalis*	U.S.A. (AZ, NM, TX), Mexico, Guatemala.	do	E	216	NA	NA
Falcon, peregrine	*Falco peregrinus*	Worldwide, except Antarctica and most Pacific Islands.	Wherever found in wild in the conterminous 48 States.	E(S/A)	145	NA	NA
Finch, Laysan (honeycreeper)	*Telespyza (=Psittirostra) cantans*	U.S.A. (HI)	Entire	E	1	NA	NA
Finch, Nihoa (honeycreeper)	*Telespyza (=Psittirostra) ultima*	do	do	E	1	NA	NA
Flycatcher, Euler's	*Empidonax euleri johnstonei*	West Indies: Grenada	do	E	3	NA	NA
Flycatcher, Seychelles paradise	*Terpsiphone corvina*	Indian Ocean: Seychelles	do	E	3	NA	NA
Flycatcher, Tahiti	*Pomarea nigra*	South Pacific Ocean: Tahiti	do	E	3	NA	NA
Fody, Seychelles (weaver-finch)	*Foudia sechellarum*	Indian Ocean: Seychelles	do	E	3	NA	NA
Frigatebird, Andrew's	*Fregata andrewsi*	East Indian Ocean	do	E	15	NA	NA
Goose, Aleutian Canada	*Branta canadensis leucopareia*	U.S.A. (AK, CA, OR, WA), Japan	do	E	1, 3	NA	NA
Goose, Hawaiian (=nene)	*Nesochen (=Branta) sandvicensis*	U.S.A. (HI)	do	E	1	NA	NA
Goshawk, Christmas Island	*Accipiter fasciatus natalis*	Indian Ocean: Christmas Island	do	E	3	NA	NA
Grackle, slender-billed	*Quiscalus (=Cassidix) palustris*	Mexico	do	E	3	NA	NA
Grasswren, Eyrean (flycatcher)	*Amytornis goyderi*	Australia	do	E	3	NA	NA
Grebe, Atitlan	*Podilymbus gigas*	Guatemala	do	E	3	NA	NA
Greenshank, Nordmann's	*Tringa guttifer*	U.S.S.R., Japan, south to Malaya, Borneo.	do	E	15	NA	NA
Guan, horned	*Oreophasis derbianus*	Guatemala, Mexico	do	E	3	NA	NA
Gull, Audouin's	*Larus audouinii*	Mediterranean Sea	do	E	3	NA	NA
Gull, relict	*Larus relictus*	India, China	do	E	15	NA	NA
Hawk, Anjouan Island sparrow	*Accipiter francesii pusillus*	Indian Ocean: Comoro Islands	do	E	3	NA	NA
Hawk, Galapagos	*Buteo galapagoensis*	Ecuador (Galapagos Islands)	do	E	3	NA	NA
Hawk, Hawaiian (=Io)	*Buteo solitarius*	U.S.A. (HI)	do	E	1	NA	NA
Hermit, hook-billed (hummingbird)	*Glaucis (=Ramphodon) dohrnii*	Brazil	do	E	15	NA	NA
Honeycreeper, crested (='akohekohe)	*Palmeria dolei*	U.S.A. (HI)	do	E	1	NA	NA
Hornbill, helmeted	*Rhinoplax vigil*	Thailand, Malaysia	do	E	15	NA	NA
Honeyeater, helmeted	*Meliphaga cassidix*	Australia	do	E	4	NA	NA
Ibis, Japanese crested	*Nipponia nippon*	China, Japan, U.S.S.R., Korea	do	E	3	NA	NA
Kagu	*Rhynochetos jubatus*	South Pacific Ocean: New Caledonia	do	E	3	NA	NA
Kakapo (=owl-parrot)	*Strigops habroptilus*	New Zealand	do	E	3	NA	NA
Kestrel, Mauritius	*Falco punctatus*	Indian Ocean: Mauritius	do	E	3	NA	NA
Kestrel, Seychelles	*Falco araea*	Indian Ocean: Seychelles Islands	do	E	3	NA	NA
Kingfisher, Guam Micronesian	*Halcyon cinnamomina cinnamomina*	Western Pacific Ocean: U.S.A. (Guam)	do	E	156	NA	NA
Kite, Cuba hook-billed	*Chondrohierax uncinatus wilsonii*	West Indies: Cuba	do	E	3	NA	NA
Kite, Everglade snail	*Rostrhamus sociabilis plumbeus*	U.S.A. (FL), Cuba	Florida	E	1	17.95(b)	NA
Kite, Grenada hook-billed	*Chondrohierax uncinatus mirus*	West Indies: Grenada	Entire	E	3	NA	NA

REFERENCE NO. 34

SHEET 25
TOPOGRAPHIC SERIES

STATE OF NEW JERSEY
DEPARTMENT OF ENVIRONMENTAL PROTECTION
DAVID J. BARDIN, Commissioner

ORIGINAL SURVEY MADE UNDER DIRECTION OF
C. C. VERMEULE, TOPOGRAPHER IN 1880-3, 1954 REVISION
BY R. G. BLANCHARD, TOPOGRAPHIC ENGINEER.
REVISION OF 1974 BY THE STAFF OF THE
BUREAU OF GEOLOGY AND TOPOGRAPHY
BASED ON 1972 AERIAL PHOTOGRAPHY.
SUPERVISED BY GEORGE J. HALASI-KUN,
TOPOGRAPHIC ENGINEER

OFFICE OF THE COMMISSIONER
BUREAU OF GEOLOGY AND TOPOGRAPHY
KEMBLE WIDMER, STATE GEOLOGIST

SHEET 26
TOPOGRAPHIC SERIES

STATE OF NEW JERSEY
DEPARTMENT OF CONSERVATION AND ECONOMIC DEVELOPMENT
JOSEPH E. McLEAN, Commissioner

DIVISION OF PLANNING AND DEVELOPMENT
THEODORE J. LANDON, Director
MEREDITH E. JOHNSON, State Geologist

ORIGINAL SURVEY MADE UNDER DIRECTION OF
C. C. VERMEULE TOPOGRAPHER IN 1880-3, 1955 REVISION
BY R. G. BLANCHARD, TOPOGRAPHIC ENGINEER.


Site location
3 mi. radius
Scale: 1 Mile to an Inch
Miles
Yards
Meters

WATER SUPPLY OVERLAY
SHEET 25

BUREAU OF GEOLOGY AND TOPOGRAPHY
KEMBLE WIDMER, STATE GEOLOGIST

COMPILATION AS OF AUG. 1975

SOURCES

1. BUREAU OF GEOLOGY AND TOPOGRAPHY: BULLETIN 73, 1974.
2. ESSEX COUNTY MASTER PLAN: WATER SUPPLY ELEMENT, 1972.
3. HUNTERDON COUNTY MASTER PLAN REPORT 4: GROUND AND SURFACE WATER, 1967.
4. INFORMATION SUPPLIED BY THE BUREAU OF POTABLE WATER.
5. MIDDLESEX COUNTY PLANNING BOARD COMPREHENSIVE MASTER PLAN: APPENDIX: COMPREHENSIVE WATER PLAN PHASE ONE, 1968; COMPREHENSIVE WATER PHASES TWO AND THREE, 1970; RECOMMENDED WATER AND SEWER SYSTEMS: PLAN AND PROGRAMS, 1971.
6. MORRIS COUNTY MASTER PLAN: WATER SUPPLY ELEMENT, 1969.
7. SOMERSET COUNTY PLANNING BOARD: WATER SUPPLY AND DISTRIBUTION, 1973.
8. UNION COUNTY MASTER PLAN PROGRAM REPORT 5. SUMMARY: SEWER AND WATER PLAN, 1971.

WATER SUPPLY OVERLAY
SHEET 26

BUREAU OF GEOLOGY AND TOPOGRAPHY
KEMBLE WIDMER, STATE GEOLOGIST

COMPILATION AS OF AUG. 1975

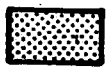
SOURCES

1. MIDDLESEX COUNTY PLANNING BOARD, COMPREHENSIVE WATER PLAN PHASE ONE; APPENDIX: COMPREHENSIVE WATER PLAN PHASE ONE; COMPREHENSIVE WATER PLAN PHASES TWO AND THREE; RECOMMENDED WATER AND SEWER SYSTEMS: PLANS AND PROGRAMS; 1968, 1968, 1970, 1971 CONSECUTIVELY.
2. UNION COUNTY MASTER PLAN PROGRAM, SUMMARY - SEWER AND WATER PLAN, 1971.
3. PASSAIC COUNTY WATER STUDY, 1969.
4. MORRIS COUNTY MASTER PLAN WATER SUPPLY ELEMENT, 1971.
5. INFORMATION SUPPLIED BY ESSEX COUNTY DEPARTMENT OF PLANNING.
6. HUDSON COUNTY MASTER PLAN ON LAND USE - SEWAGE AND WATER, 1968.
7. BERGEN COUNTY COMPREHENSIVE PLAN WATER FACILITIES, FINAL REPORT, 1970.
8. INFORMATION SUPPLIED BY BUREAU OF POTABLE WATER.

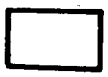
LEGEND

AREA SERVED BY PRIVATE WATER SERVICE COMPANIES

AREA SERVED BY REGIONALLY OWNED WATER SERVICE COMPANIES



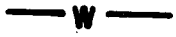
AREA SERVED BY MUNICIPALLY OWNED WATER SERVICE COMPANIES



AREA NOT PRESENTLY SERVED BY WATER SERVICE

PUBLIC SUPPLY WELLS

SURFACE WATER INTAKE



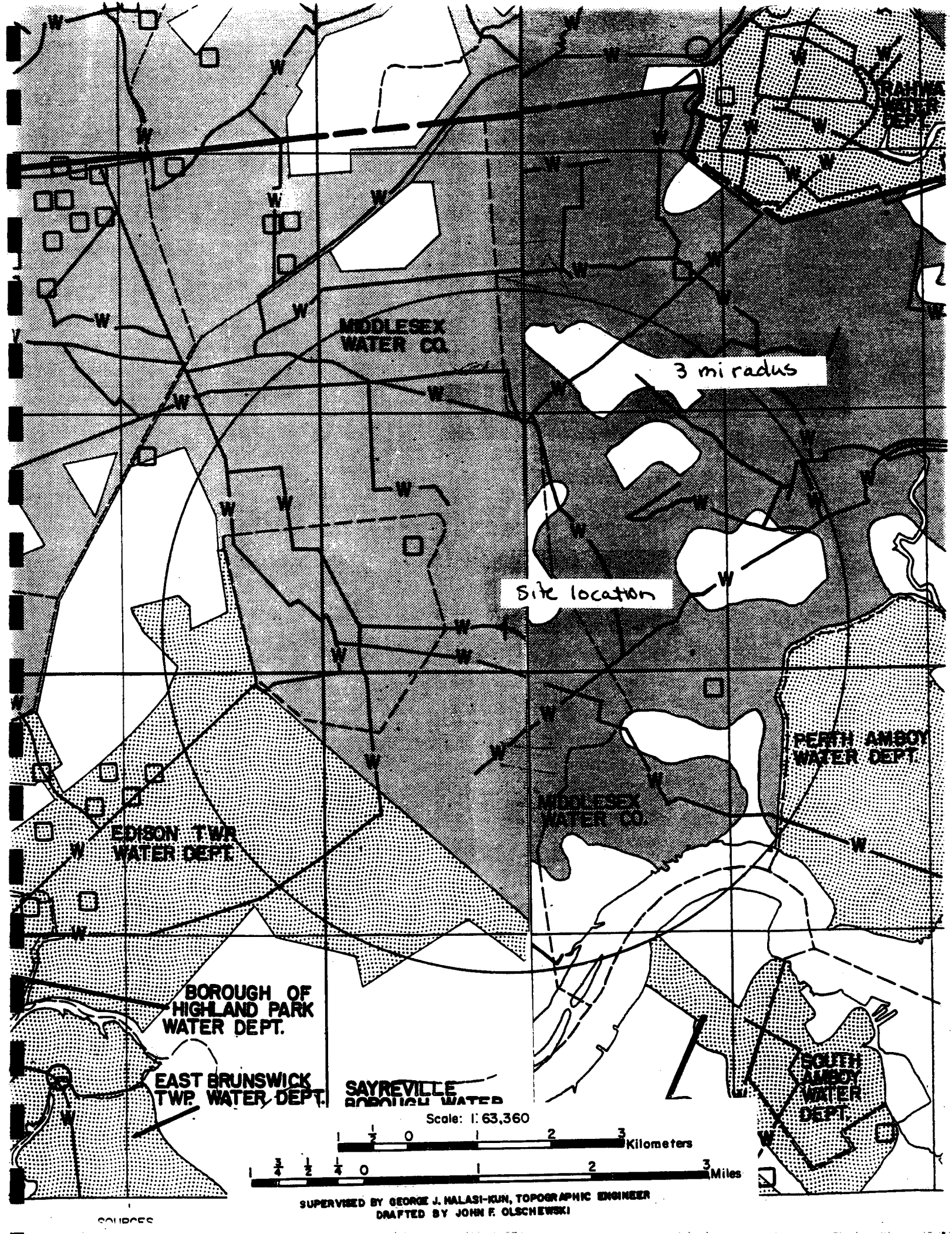
MAJOR WATER MAINS

WATER MAIN ACROSS HIGHWAY FOR FUTURE USE

TOWNSHIP BOUNDARIES

COUNTY BOUNDARIES

ALL MAP COORDINATES ARE FOR THE LOWER LEFT HAND CORNER


MIDDLESEX WATER CO.
3 mi radius
Site location
PERTH AMBOY WATER DEPT.
MIDDLESEX WATER CO.
EDISON TWP WATER DEPT.
BOROUGH OF HIGHLAND PARK WATER DEPT.
EAST BRUNSWICK TWP. WATER DEPT.
SAYREVILLE
SOUTH AMBOY WATER DEPT.
Scale: 1:63,360
Kilometers
Miles
SUPERVISED BY GEORGE J. HALASI-KUN, TOPOGRAPHIC ENGINEER
DRAFTED BY JOHN F. OLSCHEWSKI
SOURCES

REFERENCE NO. 35

GSC-TR8645

GRAPHICAL EXPOSURE MODELING SYSTEM

(GEMS)

USER'S GUIDE

VOLUME 2. MODELING

Prepared for:

U.S. ENVIRONMENTAL PROTECTION AGENCY
OFFICE OF PESTICIDES AND TOXIC SUBSTANCES
EXPOSURE EVALUATION DIVISION
Task No. 3-2
Contract No. 68Ø23970
Project Officer: Russell Kinerson
Task Manager: Loren Hall

Prepared by:

GENERAL SCIENCES CORPORATION
8401 Corporate Drive
Landover, Maryland 20785

Submitted: December 1, 1986

GEMS> I

OAKITE PRODUCTS
LATITUDE 40:32:30 LONGITUDE 74:22:10 1980 POPULATION

KM	0.00-.400	.400-.810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	3612	9962	27003	38091	50833	129501
RING TOTALS	0	3612	9962	27003	38091	50833	129501

GEMS> I

OAKITE PRODUCTS
LATITUDE 40:32:30 LONGITUDE 74:22:10 1980 HOUSING

KM	0.00-.400	.400-.810	.810-1.60	1.60-3.20	3.20-4.80	4.80-6.40	SECTOR TOTALS
S 1	0	1204	3569	9109	12759	16592	43233
RING TOTALS	0	1204	3569	9109	12759	16592	43233

Cumulative Totals

ring radius (mi)	population	housing
0 - 1/4	0	0
0 - 1/2	3,612	1,204
0 - 1	13,574	4,773
0 - 2	40,577	13,582
0 - 3	78,668	26,641
0 - 4	129,501	43,233